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JOHN LAPTADFF-STOCK, INC.

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The Minolta 700si



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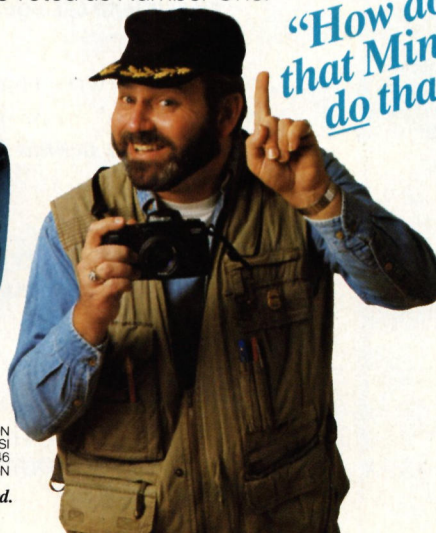
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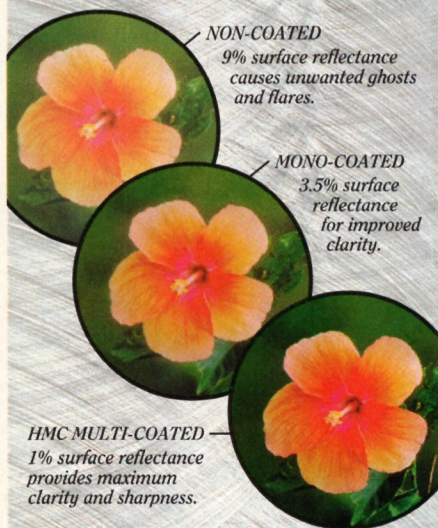
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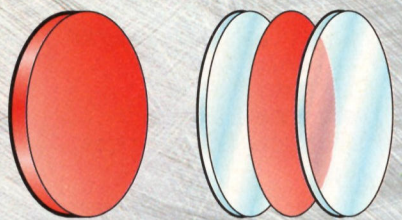
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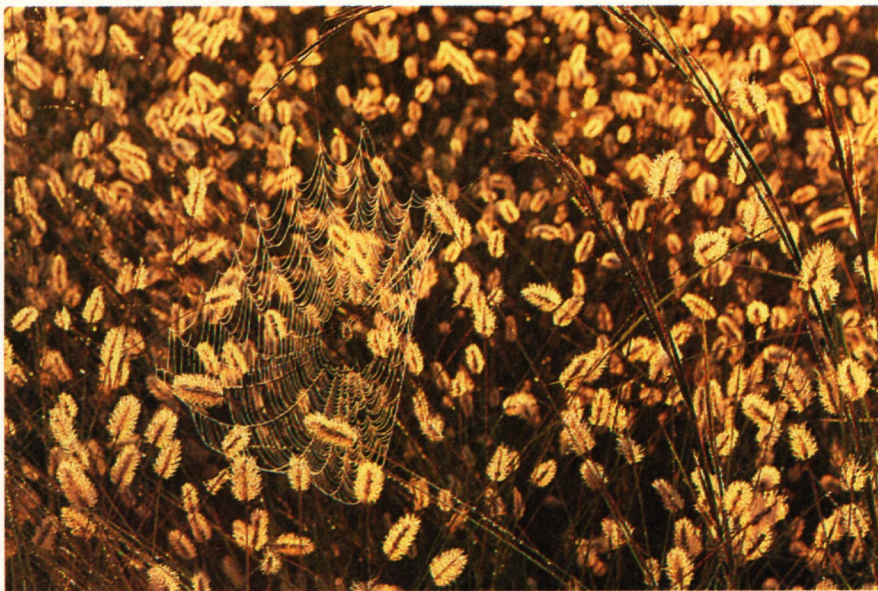
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Outdoor Photographer



HAROLD R. STINETTE

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Last Frame

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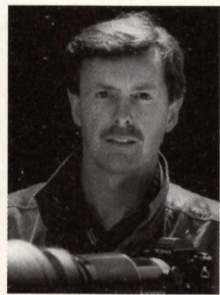
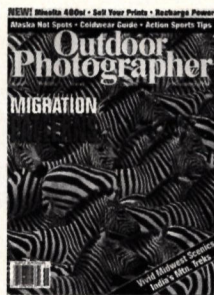
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EDITOR'S NOTE

I was surprised by how many compliments we received on the November, 1994 issue from readers and, more particularly, contributors. Most singled out the cover (zebras) and Art Wolfe's *Migrations* portfolio as reasons for their praise. Then criticisms began to mix with compliments. First we received letters and calls about the zebra cover, mostly from a vocal group of nature photographers who represent a dissenting sentiment. It was pointed out that at least one of the zebras in the mosaic of animals was a clone of another and positioned to make a more perfect pattern.

Many nature photographers took Wolfe's acknowledgment in his book introduction that some computer digitalization was used to modify some of his images as a challenge to find out exactly how much computers had been used to duplicate animals in the flocks and herds

to make the masses more complete. From there, like a *Where's Waldo* book, the search for clones was on. Soon, people were seeing clones where there weren't any. Therein lies the rub of calling attention to the process. Slightly enhanced images fall into the same category as full-computer created composites and the whole process can be distracting.



For our part, I don't think that we ever took the topic all that seriously prior to *Migrations*. When Wolfe told us that there was some digital work done on some *Migrations* images, we never pressed the issue to find out how extensive the work was and failed to make mention in our "Cover Shot" department.

Now, hardly a week goes by that we aren't involved in some correspondence or conversations about the subject of digital modification of photographic images. It looks to be the hottest topic among natural-history photographers in 1995 and for some time to come. Like it or not, the technology is here to stay and photographers will use it more and more. The challenge will be to find ways to use it, admit it and not degrade or distract from the art of photography.

In a phone interview, we talked to Wolfe about how he, as a leading photographer, plans to deal with the subject of digital technology and natural-history photography in the future. His outlook is important to us as an early step on the formulation of guidelines, but doesn't entirely reflect the opinions of our magazine. The following are excerpts from that conversation:

OUTDOOR PHOTOGRAPHER: Why did you decide to apply the still-relatively new technology of computer digitalization in *Migrations*?

Art Wolfe: As you may know, I was trained in the fine arts as a painter. I've always considered photography as another art form and the camera as one of my tools. And, as any artist, I've eagerly sought to push myself and my craft to new limits, exploring and utilizing the latest tools and technology as they become available. Early in my training, I was exposed to the work of the Dutch artist, Maurits Cornelis Escher.

More than any other artist, Escher has influenced my work and how I perceive positive and negative space. Utilizing the motif of animals, he incorporated them into stylized designs. Escher's animals fill his works from edge to edge, with bodies interlocking and transforming, fish into reptiles, reptiles into mammals, as they march across the frame.

I'd always wanted to emulate Escher's mosaics through the medium of photography. The theme of "migrations" allowed me the best opportunity to do just that. I see *Migrations* as an art book based on nature and wanted it no other way. Escher was the influence, but the animals themselves were the inspiration. I've spent so much time photographing wildlife, wishing that I could convey the emotional impact of witnessing sheer numbers and the stunning natural designs created by these animals on the move. This was compounded by the sense of urgency to communicate that these are diminishing wonders of the natural world, displaced increasingly by our growing demand for resources.

In *Migrations*, we included a strong biological introduction and captions to inform the reader as much as possible about the animals portrayed and the grow-

Outdoor Photographer

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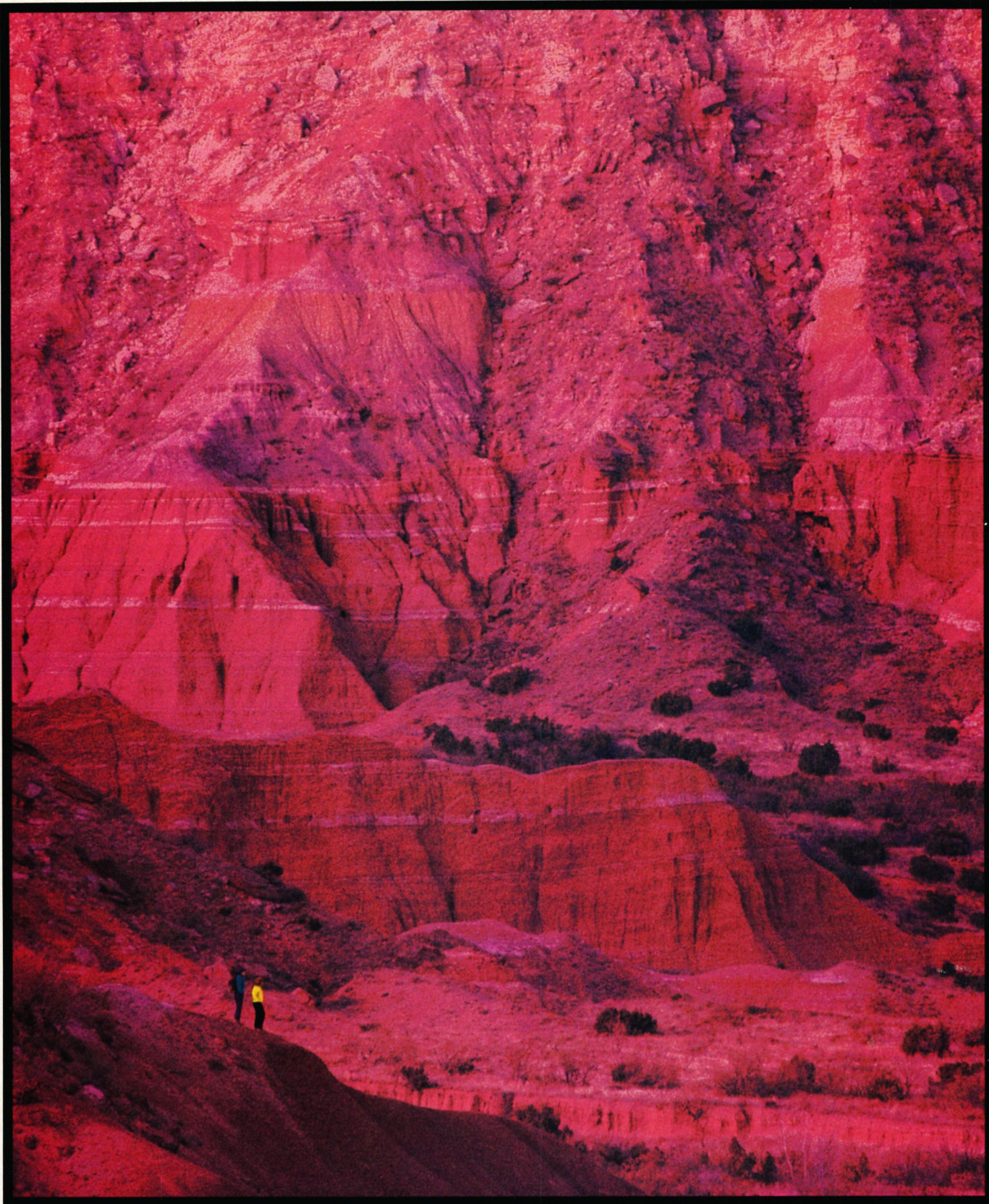
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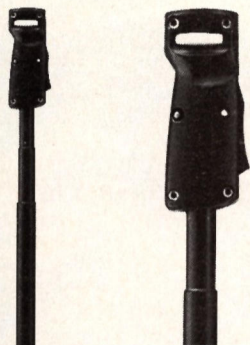
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EDITOR'S NOTE

ing threat to their migrations. But I sought, above all, as any artist does, to evoke in my readers the same passion I feel for the animals I've depicted.

OP: *We all know that the application of digitalization in nature photography in books and magazines is nothing new. Why did you decide to be candid about its application in Migrations?*

Wolfe: Before deciding to apply digitalization in *Migrations*, I canvassed some of the leaders of our industry: fellow photographers, publishers and magazine editors. As you'd expect, reactions differed widely, but nearly all concurred with the use of the computer as yet another in a long list of tools available to photographers, as long as there was disclosure of its application.

Since I'd hoped to employ digitalization in the book to ensure an Escher-like order in what is a more random reality, I took my colleagues' advice to heart and decided to be open and candid despite the questioning and debate that I knew would almost certainly result.

On page v of my introduction to *Migrations*, I stated: "Today the ability to digitally alter the disruption (of '...the pattern I was trying to achieve') is at hand. For the first time in *Migrations*, I have embraced this technology, taking the art of the camera to its limits. Since this is an art book and not a treatise on natural history, I find the use of digitalization perfectly acceptable, and in a small percentage of the photographs I have enhanced the patterns of animals much as a painter would do on canvas."

Portfolios on *Migrations* have now been published in more than 15 magazines (ranging from natural-history to photography to in-flight magazines, I might add) in 10 countries around the world. In every instance, we pointedly informed each magazine editor that the book contained digitalized images. We wanted to be sure that every magazine editor could make a fully informed decision about the issue of computer enhancement. Reactions varied greatly, but in only one instance did a magazine opt to publish only non-digitalized photographs. And no magazine opted to include mention of the digitalization.

OP: *Given your candor about digitalization in Migrations, why did you decide not to label those photographs in the book that were digitalized?*

Wolfe: As I said earlier, I see Migrations

as an art book. At the time, I didn't want to take away even in a small way from the visual impact of the book. Any more than photographers or their publishers have ever identified sandwiched photographs in print in the past, I simply didn't feel it was necessary or important to separate the digital from the non-digital with labels or symbols.

In December 1995, I'll be releasing a new book called *In The Presence Of Wolves*. Like *Migrations*, it isn't intended to be a treatise on biology. The book is intended instead to convey the aura and the mystique of the wolf.

For this new book, I again felt it appropriate to include digitalized images (a total of seven out of 120 photographs to be exact) in such a book, and I again decided to be candid about their inclusion. But this time, to avoid confusion similar to what *Migrations* has generated in some readers, I decided to label those images that were digitalized.

OP: *Does this use of computer enhancement in your wolf book mean that your photography is going even further in this direction?*

Wolfe: On the contrary. My next book, *Wild Cats Of The World*, contains no digitalized images at all. As a comprehensive treatment of all of the large and most of the small cats, their biology, behavior, adaptation and future outlook, digitalized images were simply inappropriate.

To date, I'd estimate that I've taken more than one million photographs, primarily of wildlife and mostly of nature. But I'd estimate that less than 100 have been digitalized.

The great majority of the photographs I've digitally enhanced have been specifically done for commercial applications. Each has been carefully art directed by me personally. I've been involved intimately in every step of the way.

OP: *What are your feelings about the veracity of photography, especially nature photography, and what influence computer enhancement will ultimately have on the field?*

Wolfe: I feel that this whole argument about the truthfulness and accuracy of photography has been overstated. The content of any photograph starts with what the photographer decides to include, or exclude, from the frame.

Reality can be greatly "modified" by where you point the camera, when you decide to press the shutter release and even what angle of view the photographer selects. The best photojournalists have known this and exploited it.

(Cont'd on page 81)

COVER

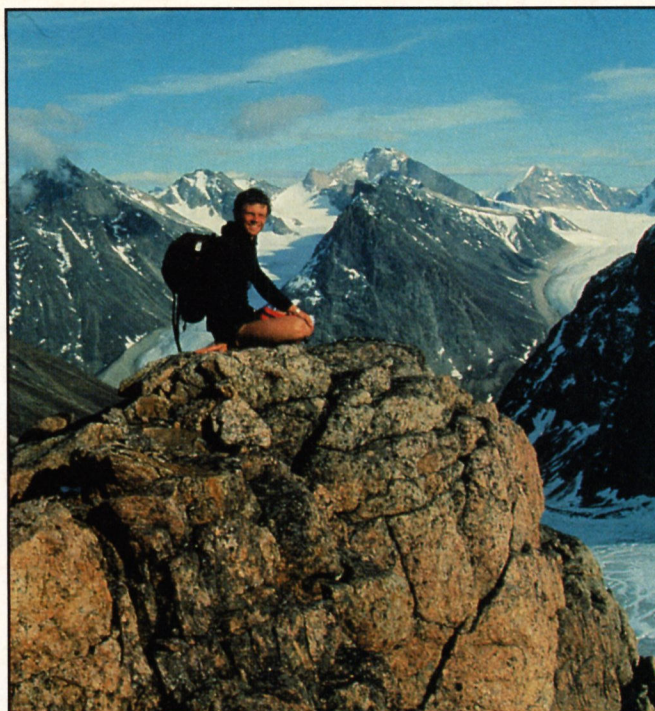
SHOT



Photographer: Jack A. Barrie
Subject: Wild bald eagles, Nanaimo River, Vancouver Island, Canada
Equipment: Canon EOS-1N, Canon AF 600mm f/4 (ultrasonic), Manfrotto 56 tripod, Bogen 3063 fluid head, Kodachrome 64
Exposure: 1/500 sec. at f/4

Situation: This mature bald eagle had been wading in a tidal pool at the mouth of the Nanaimo River on the eastern shore of Vancouver Island, Canada. From a blind and through my viewfinder, I observed the eagle hunting crabs and other saltwater crustaceans only 15 feet away from me. Suddenly, the bird became very alert and immediately took flight, heading directly toward me. Before I ducked, I fired a burst of photographs. I could see that the eagle was in trouble—it was too low and would never clear the top of my blind.

What followed from inside the semi-darkness of the blind was quite breathtaking and something I'll never forget. The eagle hit the top of the the blind, shaking the entire structure. After regaining my composure and making sure my equipment was intact, I carefully opened the blind, expecting to see an injured eagle. I scanned the area immediately surrounding my blind, but the bird was nowhere in sight. Investigating the scene outside, I surmised that a competing eagle must have landed on the old stump behind my blind and, with typical aggression, the eagle I was photographing attacked. On two other occasions, I've actually had bald eagles land on top of the blind, which was nearly as exciting an experience.



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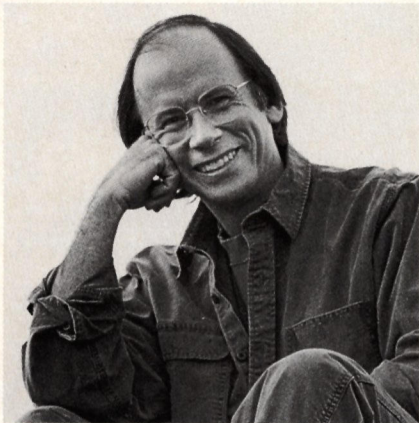
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Musing At The Sea

Take it all in and let it all go—a metaphor for living a more fulfilling life

BY DEWITT JONES



What's behind the images we photograph? Are there metaphors, lessons, runes? True, I'm a hopeless romantic, but the more intently I look, the more stories Nature has to tell.... Walking the tideline, barefoot on the tumbled stripe between water and sand, camera over my shoulder. No wind. Hardly a ripple over the vastness of the ocean. Hardly a ripple, except here at the water's edge where waves suddenly materialize as if from nowhere.

In effortless, endless succession they come. Effortless...endless...succession. I close my eyes and fill with a great calmness. Why is it so soothing to sit here? Effortless...endless...succession.

When my eyes open, the sea is gone. In its place is a

vision of the collective spirit. In this liquid metaphor before me travel incalculable individual resonances, inestimable waves within the sea itself. On the surface, it's calm. Those waves of spirit—strong, deep and prolific—can be seen only on the edges, the tidelines, the places where spirit and matter touch. Here, individual resonances are pushed to the surface, concentrated, and their forms become visible. They curl onto the shore of life, full of power and energy. They hurl themselves headlong upon the sand.

From the point of view of those on the beach, they eventually dissipate and die. From the point of view of the great sea, however, they merely change direction. We can see it if we look. There, sliding underneath the new incoming wave! The old wave, heading out again, setting off on another journey, searching for another edge where it might

again take form. (Some of you are saying, "Wait a minute! The wave loses power as it hits the beach. What little goes back may never have the energy to make it to another shore." I answer, "Hey, this is metaphor, not mentation; symbol, not science. Noetic knowledge, not to be proved, but to be felt. Besides, in my metaphor, there's no friction anyway." Back to the beach....)

All that remains is a line of wetness, a damp memory of the wave now seemingly gone, immediately overwhelmed by the next incoming surge. Traces from the very largest waves linger a little longer above the rest, but eventually those memories too sink back into the sand. Beneath the surface, however, even the moisture of the memory returns to the sea.

*...the more intently I look,
the more stories Nature
has to tell....*

My heart can hear the waves repeating, *Endlessly, effortlessly. Over and over and over again. No loss, just different forms. Nothing to fear. Nothing to fear.*

I love it when I begin to see this way. Listening with my eyes and my heart to the stories Nature tells in metaphor. Are they real or just games I play with my mind? As I sit here so peaceful on the tideline, it doesn't matter.

I notice my own breath. Another teacher like the sea. How easily it too rises and falls. Effortless. I'm not really in control. I can momentarily interfere, but I can't stop it.

A friend once taught me the one-breath meditation—everything I needed to know about life encapsulated in one breath: *Take it all in, and let it all go.*

If I don't let myself take it in, eventually I expire. Guess that would be living the maxim: *If I'm careful enough, nothing good or bad will ever happen to me.* If I take it in, but refuse to let go? Hey, that's *He who dies with the most toys is still dead!*

Endless, effortless ebb and flow—like waves on the beach, like lives on the planet, like breath in our lungs. Nothing to do but take it all in, let it all go...and trust.

I pick up my camera. Perhaps I could find a photograph that might hint at the experience. Or maybe it was enough just to let it expose my soul. **OP**



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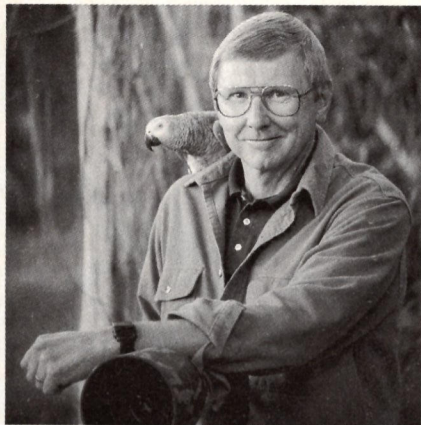
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The Seemingly Impossible

Keep On The Path • Brighter 6x7 • Breaking Beams • Windy Answers

BY GEORGE LEPP

Keeping On The Path

I'm going to be photographing in a walk-through aviary and would like to know how I can get the best photographs under the restrictive conditions that the facility has put upon photographers. My main concern is the ban on tripods.

M. Curtis
Miami, Florida

This country has many facilities that are ideal for nature photography because they place the photographer in close proximity to the subject. This holds true for birds, butter-

flies. But again, I've seen well-meaning photographers with monopods not watch the other lethal end and injure passersby.

The answer is to plan your photography to be as self-contained and hand-held-inclined as possible. When I photograph at Butterfly World near Fort Lauderdale, Fla., I use electronic flash on the camera and a medium telephoto lens to reach into the plants and photograph the critters without stepping off the path. The flash gives me a relative shutter speed of over $\frac{1}{1000}$ sec. due to the short duration of the pulse of light that takes the picture. If you want some of the ambi-

ent light to record, just use a slower sync shutter speed. If the camera, lens and flash are too heavy to support for great lengths of time, then use a monopod, but watch the other end of the pod as you move about.

Staying on the path is a lot to ask of a photographer bent on getting a full-frame image or a creative angle. In locations that are heavily used, we're the ones setting the example. If we just once sneak into the plants to get a closer shot of the bird, two point-and-shoots and three toddlers will be right behind us. Right behind them will be the keeper with a developing attitude toward photographers.

Flash can be another story. Some aquariums have restricted flash because of animals that are adversely affected by the bright burst of light, such as the octopus. In other places, the rule may only exist because a keeper per-

ceives that flash would hurt an animal's eyes. In talking to ophthalmology experts, I've been assured that this isn't the case. What can be a problem is the accumulative effect of hundreds of persons flashing the animal in the face every day, which could eventually cause a behavioral problem. Out in the field, such as the Galapagos Islands, the flash has no effect on the animals and the rule of no fill-flash is ridiculous. Keep in mind that the authorities can still fine you or ask you to leave if you break the rules.

I've photographed in many aviaries and walk-through cages and have never been thrown out or had a confronta-



flies and even some small mammals. The rules at these places seem to be aimed at making photography as impossible as possible. No tripods, stay on the path and no flash.

The tripod problem is mainly a factor of group safety and liability. A Gitzo or Bogen leg out in the path can trip someone or cause a traffic jam. Some photographers ask for a waiver by promising to keep their tripod legs closed up like a monopod, but just one slip of the legs where they block the path, and the authorities promise to never again make an exception. The possible use of a monopod can be an answer if the keepers can see that the legs can't splay

tion because I needed to break the rules. Following the rules is just another problem to solve in the quest for great photographs—and the photographic possibilities far outweigh the restrictions.

A Brighter 6x7

OUTDOOR PHOTOGRAPHER reader C. Christensen of Marietta, Ga., wrote to give other 6x7 camera users a tip about replacing the focusing screen. I offer her tip because I too have had difficulty focusing a 6x7 camera in low-light situations. She has installed a Hi-Lux screen from Maxwell Precision Instruments and says she can now see details in the corners that were difficult to discern before. Mr. Maxwell takes the manufacturer's screen and modifies it to new specifications with his special process. He claims a typical increase in brilliance of four to five times the original screen. I'll let the individual photographer be the judge. For information on the 6x7 screens and Hi-Lux screens for other cameras, contact: Maxwell Precision Optics, P.O. Box 33146, Decatur, GA 30033, (404) 939-6644.

Breaking The Beam

I've received numerous letters asking about setting up a beam shutter tripper to capture birds, mammals and insects in action. A beam shutter tripper is a narrow beam of infrared light that, when interrupted, closes a circuit and fires a camera. By placing one or two of the beams strategically, the camera can be focused at the exact spot that the animal is at the moment the beam or beams are broken.

I've started to experiment with a pair of Shutter-Beams manufactured by Woods Electronics. This electronic tripping device can be activated by a sound trigger as well as the light beam. By using two Shutter-Beams, I can pinpoint the location in which the subject must be to trip the camera. So far I've set the system to photograph pine siskins coming to my backyard seed feeder. The beams were aimed at a spot on an oak branch located next to the feeder. The birds landing on the branch took their own photograph as you can see in the image accompanying this column. I had one flash on a body with a 300mm *f*/2.8 lens focused on the branch. Watch for a full report on beam-shutter trippers in *OP* later this year.

This technology isn't for the faint of wallet. Each Shutter-Beam costs about \$400, but then I know of no other way to get some of the pho-

tographs I've seen using these devices. Contact Woods Electronics, 14781 Pomerado Rd., #197, Poway, CA 92064, (619) 486-0806.

A Windy Answer

How do professionals such as yourself deal with wind? It's very tough to take a good shot in the wind, especially close-up, even in a light breeze. I've noticed that most landscapes seem to use long time exposures for the really great shots. Here in the Midwest, that's almost impossible, no matter what time of day or year.

M. Boothe

Overland Park, Kansas

Tripods of the heavy variety are one of the few answers for working in windy conditions and are necessary tools in eliminating the vibrations associated with wind blowing against the camera. Another method is to work as low to the ground as possible. The higher in the wind and the longer the extended legs, the more the movement. If possible, use a wind break. I've set up behind my van on a number of occasions. Using a tree or bluff as a shield is sometimes possible.

A solution in some landscape situations is to use a tilt/shift lens. A 24mm, 45mm and 90mm are available. With a field of flowers where you'd like to have everything sharp, tilting a 24mm tilt/shift lens will allow a wide aperture and a fast shutter speed with even slow color film. An ISO 50 film in full sun would need $\frac{1}{40}$ sec. at *f*/16 with a conventional 24mm wide-angle to ensure maximum depth of field, but the plants would blur with wind movement. The tilt/shift 24mm would cover the same depth of field at *f*/5.6 and allow a wind-stopping shutter speed of $\frac{1}{500}$ sec. The lenses, however, fit only Canon EOS bodies.

In macro photography, I look for subjects that are protected to some degree from the wind. I also employ a lot of flash to stop any movement, but the plane of focus can still be a problem as the subject moves about. Having an assistant hold a wind block like a Westcott diffusion panel can help when shooting small flowers. For extreme close-ups of subjects that can be moved, I take them into the quiet of my travel trailer or van and use electronic flash.

OP

If you have any tips or questions, address them to: OUTDOOR PHOTOGRAPHER, Dept TT, George Lepp, 12121 Wilshire Blvd., Suite 1220, Los Angeles, CA 90025.



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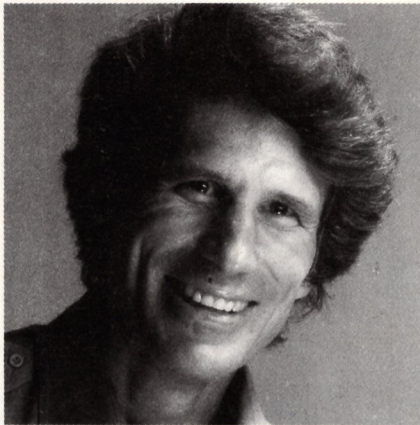
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Captivating Shots

As editorial representations are called into question more and more, photographers must be comfortable with disclosing their techniques

BY GALEN ROWELL

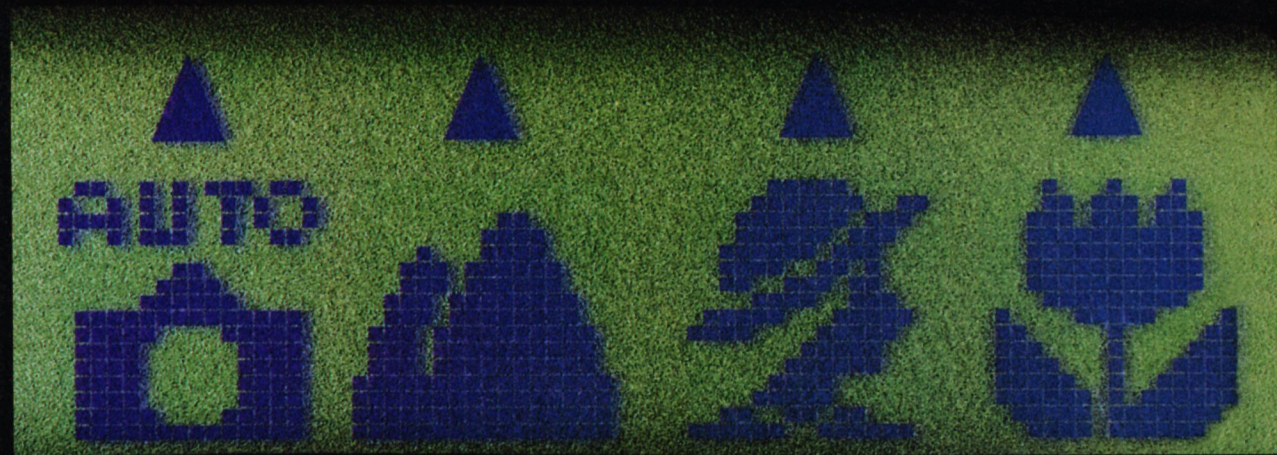


For me, there's no question which of these images is the better bobcat photograph. My son, Tony, took the image on the right on his 23rd attempt in the hills of Marin County, California, months after spotting one during a mountain bike ride. When he first showed me a distant image of a wild bobcat in tall grass from an earlier outing, I was excited by what the photograph represented, but not by its quality. It possessed the basic integrity that we take for granted in editorial nature photography—a record of a visual event that a human really saw in the wilds and captured on film—unless we read a disclosure to the contrary.

Based on this assumption of wildness, we might not choose his image of an immature bobcat taken with a hand-held 400mm lens over my image of an adult male

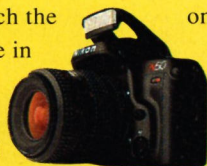
taken at close range on a tall tripod with balanced fill-flash. However, I can't in good conscience present my image for comparison or editorial use without disclosing that it depicts a captive animal. The cat belongs to Wildlife Associates, a non-profit group that brings animals to schools to show children their environmental heritage. I took the photograph in a suburban field near San Francisco on a commercial assignment to demonstrate the capabilities of a new camera for a manufacturer's video that clearly depicted the captive situation.

I have serious misgivings about placing my bobcat photograph with any stock agency that makes a practice of selling captive wildlife images without disclosures. I believe that nature photographers and their agents have a moral obligation to disclose captive or controlled animals in captions and strongly suggest to buyers that this information



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be printed with all journalistic uses. I've recently pulled all my photographs from a major agency that not only fails to do this, but also makes a regular practice of supplying images with digitally added "wildlife" to editorial customers. Needless to say, sales of my truly wild images with this agency had been poor, but for me the last straw was another photographer's story of an agency that told him point-blank it didn't care if any of his images were wild or not.

In fact, book and magazine readers do care. Despite the chorus from workaday nature photographers that they must shoot captive portraits to compete in the marketplace, the magazines we most trust place a high value on truly wild images and go to great effort to reveal the truth of the captive shots they sometimes use to fill out coverage, especially of rarely seen creatures. For example, articles on cougars in *National Geographic* and *Natural History* clearly disclose captive situations. Some years ago, the

struggling American edition of the fine German magazine, *Geo*, closed its doors after negative publicity over a photo story on wild pandas that used entirely captive photos that the photographer reportedly misrepresented to the magazine.

Disclosures of staged nature photographs aren't moral imperatives in illustrative uses that don't imply direct journalistic representation of wild situations. These include field-guide illustrations, decorative posters and most advertisements. The ethics of still photography are quite similar to those of television, which has plenty of room for created fantasy but firm guidelines for journalistic representations. Two major networks were brought to their knees in recent years by assertions of staging news coverage. A battle was reportedly recreated after the fact in Afghanistan, and a vehicle gas tank didn't blow up solely from impact. In both cases, the imagery had enough validity to have been used with proper disclosure (and decreased visual impact) to illustrate what a person at one of the real scenes might have seen.

The ethical litmus test is whether the meaning of an editorial photo-

graph significantly changes when the facts of its creation are revealed. An excellent rule of thumb for all use of controlled situations and image manipulations in photos that purport to represent the natural world is never to do anything you wouldn't feel comfortable having disclosed in a caption or by later investigation. For example, I don't feel comfortable creating photographs of wildlife at game farms. Others do. For the video demonstration of wild-animal photography on which I was working during the same week that Tony took his first publishable slide of a wild bobcat, I purposely avoided operations that cage healthy animals to make money from photographers and instead chose an educational facility that uses mostly injured or orphaned animals. My choice.

Tony was filled with pride and unaware of what I'd just been shooting for the video when he came to my office to show me a slightly blurred, full-frame profile of a bobcat on the run. He was well aware, however, that as of the previous week, I had no close-ups of wild bobcats in my stock files (although he had been

Sundance



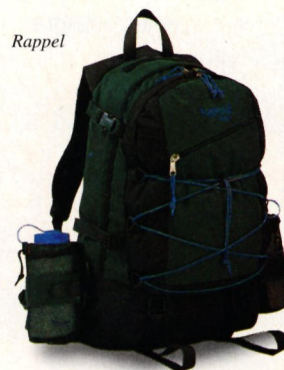
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with me in Alaska as a five-year-old when I made a rare close-up of a wild lynx). After I congratulated him on a great action shot of a wild creature, he asked if I thought a magazine like *OP* would publish it. I said probably not. Without an explanation, I put my photograph of the captive cat on the light box.

Tony looked crestfallen. He asked if I had been out with Michael again, referring to a friend who had won a major contest with a tight shot of a wild bobcat called in to the sound of a dying rabbit. Tony knew I'd been in the field with Michael several times without calling in a cat.

"Yes," I replied, watching Tony's disappointment as he checked out an image that appeared to better all his efforts. The instant I explained that Michael had only been with me as my assistant photographing a captive bobcat, his own wild image reigned supreme again. As we talked, he saw a new Sierra Club calendar on my desk with a too-perfect bobcat on the cover and asked, "Is that captive, too?"

"I believe so," I answered, checking the vague "northeastern Montana" caption. He was getting the message

loud and clear that most of the visual power held by photographs of nature is a cultural response based on trust, personal knowledge and basic assumptions about the wild reality those images represent. His experience of instant disillusionment with a photograph of a seemingly wild animal revealed to be captive is ever more common these days. The cat is out of the bag, so to speak. Readers can't regain faith in the power of truly wild photographs as easily as Tony did with his bobcat image because they weren't there to validate the situation by direct observation. His photograph has absolute eyewitness credibility in his own mind, yet it might be doubted as captive by readers who saw it in a publication that doesn't disclose captive situations.

On a recent natural-history cruise, I watched a wealthy amateur photographer entertain passengers by calling out the funky first names of dangerous-appearing predators in picture books by well-known photographers that she borrowed from the ship's library. She had paid large sums to the same game farms to work with the same animals. Only a small percent-

age of the shocked passengers had any inkling that such practices were commonplace. Word spread quickly, and people began openly making a game out of questioning wildlife photographs in other books. Several of my books were aboard, and I breathed a sigh of relief that I'd insisted on proper disclosure of the few captive animals.

I see what happened aboard that ship as a microcosm of the greater public scrutiny to come which misrepresented nature photography is bringing upon itself. The traditional assumption that the basic form of what we see in a nature photograph represents an event in the natural world isn't inborn, but culturally established by the general reliability of published editorial photography over the last 150 years. While there have always been abuses, just as there are always a few counterfeit \$100 bills around, our basic trust about what an image printed on paper really represents is now open to question as never before. It's up to us, the photographers, to police ourselves and make sure that our work is created and published with moral integrity before others step in and do it for us. **OP**

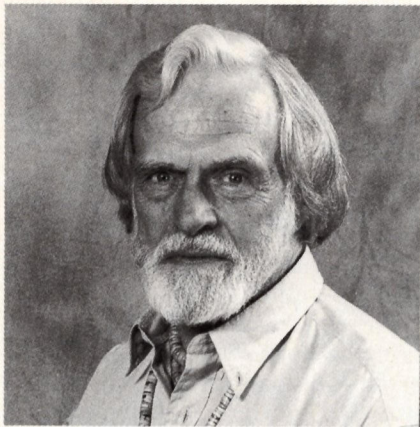


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Raccoon Ridge

For serious birders, this is the place to witness the annual hawk migration

BY LEONARD LEE RUE III

I live at the eastern base of the Blue Ridge section of the Kittatinny Mountain range, a section of the Appalachians that run from Maine to Georgia. While Hawk Mountain, Pennsylvania, is a far more famous area for viewing and photographing the annual hawk migration, I prefer Raccoon Ridge in New Jersey, primarily because the hawks stop here first.

From mid-September to about mid-November, I can expect to see hawks passing southward in migration almost any time I take the time to check the sky. The broadwings are first to arrive, followed by the little sharp-tailed hawks. From then on, it's the red-shouldered hawk, the red-tailed hawk, Cooper's hawk, goshawk, an occasional peregrine, vultures, crows, bald eagles and even a golden eagle that will pass on down the ridge.

Years ago, gunners used to shoot hawks by the thousands each fall as they migrated south to their winter range. That was before the period of enlightenment when many states, including Pennsylvania, was still paying a bounty on hawks and owls. It was a time when every hand was turned against the raptors because of their predatory ways. Today, we know that most of the raptors' activities are beneficial to humankind. Federal law now protects all hawks, owls and eagles, and this is the way it should be. The control of rodents by the raptors more than offsets the occasional game species that they take.

I prefer working on Raccoon Ridge, not only because it's in my own backyard, but because there's only a single spine of mountain and the hawks may come down either side. Hawk Mountain, outside Kutztown, Pa., has a



number of ridges and the birds may not come as close. Some of my colleagues put up papier-mâché models of a great horned owl in order to pull the hawks in closer. Many folks know that an owl decoy is great for attracting small birds; it also works well for attracting the various hawks.

The fabulous eyesight of the hawk is well known, yet the distance at which it can spot stationary decoys never ceases to amaze me. Of course, to be most effective, the owl decoy should be placed on top a long pole so it sticks out above the vegetation and dwarf trees that grow on the ridge. Because of their keen eyesight, you'll have to dress in camouflage as well as cover your camera and tripod with camo. I prefer this method over using a blind because the birds may appear from almost any direction and you need more freedom of movement than you'd have

in a blind. The blind, however, is far superior when your subjects are coming from a predetermined direction.

Not all raptors will dive at your decoy owl, but it will pull in enough birds to make photography worthwhile. If you plan to employ a decoy, use it on weekdays. So many people flock to the ridge on weekends that the decoy becomes useless. Most visitors are there just to see the hawks and come armed with good 8- to 10-power binoculars. They don't need to have the birds come in close, so they sit and stand right out in the open. It's usually a very jovial crowd, and most of these birders really know their hawks.

To get to Raccoon Ridge from Blairstown, N.J., travel west on Route 94. About three miles west of town, turn right onto Walnut Valley Road. After 2.4 miles, you'll

come to a gate at the entrance to the Jersey Central Power and Light Co., whose land you'll have to cross to get to the ridge. As a gesture of good public relations, the power company does everything to facilitate your getting there. They've even provided a picnic area for visitors. Stop and check in with the guard; there's no fee, and you'll be given literature about the power plant and the ridge.

After passing the checkpoint, you'll see a turnoff to the left and then a "Y" in the road. Take the fork to the right. From the gate to the parking area is 1.2 miles, turn right by the stone columns. After locating the parking area and parking your vehicle or bike, walk back to the main road and continue westward for 100 yards where a very hard-to-see brown sign will show you where to start on the old wood road up the mountain.

According to the physical shape you're in, you should be able to walk to the top of the mountain in about a half-hour. When you reach the top, the old Kaiser's Road bisects the famous Appalachian Trail; turn left. You'll now be on land owned by

Tock's Island National Recreation Area.

There are two small "bald," rocky outcroppings along the trail that are fine for hawk-watching and are good places to put up a decoy owl. There's nearby shrubbery you can sit against to break up your outline; do so even if you're wearing camouflage.

If you continue south on the trail, you'll come to the largest, most open area, which is in New Jersey's Worthington State Park. This is the highest knob and the one used most often by hawk watchers, as there's an unrestricted view down both sides of the mountain. The Delaware River flows along the base of the western side of the mountain separating New Jersey and Pennsylvania. This is a spectacular spot to also do some scenic photography, especially of beautiful fall foliage.

Although many of us have taken great photos of hawks in flight focusing the camera by hand, it's here that fully automatic lenses come into their own. Because of the openness of the balds, where there's little or no vegetation to interfere with the lens, autofocus lenses will allow you to create far superior images.

If you choose to work either of the smaller balds on the ridge, then a lens length of up to 400mm should suffice. If you're using a decoy, you may be able to pull the birds within camera range. If you opt to shoot from the highest, largest bald, where other people may keep the birds to much farther out, you'll need a 600mm autofocus or 800mm manual lens. The manual lenses work okay here because, as the birds will be farther out, your depth of field is much greater and you'll have more time to focus.

I've found that I can get the proper exposure for photography against the sky by simply metering the neutral vegetation in the same direction as the hawk flies. If you're using auto-exposure, just meter the vegetation, lock the meter and swing up to the sky and shoot.

Check the local weather forecasts before you begin your hike because the birds usually move down the ridge in force in front of a storm. On days when there's a pressure high, a "bluebird day," the hawks usually rest, hunt and feed, awaiting the next front to loft them effortlessly down the ridge. **OP**

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Shunpiking For Tulips

Traveling off the beaten path to photograph Holland and its flowers

BY LISL DENNIS

While I never fancied myself much of a flower photographer, over the years I've noticed that the flower photos that most appeal to me are those that approach a level of abstraction upon initial viewing—clean backgrounds thrown out of focus or a *shibui*, less-is-more composition—before announcing themselves as roses, pansies or tulips. I'd never really practiced what I preached until I traveled to Holland.

A love of tulips is an endemic Dutch affliction I picked up while shunpiking through Holland's tulip fields last spring. My husband, Landt, and I luckily hit the height of the tulip bloom, which was late, about the last two weeks of April. The Dutch tulip scene is enough to turn any non-flower photographer into a manic bloom shooter.

I began my photography at Clusius' Garden, the Hortus Botanicus in Leiden, where I saw the earliest tulips planted in the Western world. In town after town, tulips presented themselves to my camera as a symbol of the Dutch lifestyle. Private front-yard gardens and village medians were planted in segments of single-colored tulips dancing to and fro in the breeze while street lights carried baskets of blooms on high for annual tulip festivals. Bunches of tulips rode home from outdoor flower markets in bicycle baskets; restaurants and cafes brightened tables with blooms in Delft vases.

Perhaps the most clichéd photo op in the world is Holland's striped tulip fields in the Bulb District between Haarlem and Leiden. Each evening, we shunpiked on the major and minor roads interconnecting the multi-colored tulip fields. The morning haze from the sea having burned

off, the evening light illuminated the stripes, providing photographs that looked like color field canvases or computer-graphic images.

As the weather was often windy, I made good use of a tripod and my 80-200mm zoom and 300mm lenses on the fields of flowers. Hitting high bloom—the blossoms are cut to preserve strength in the bulbs—I shot many a field in full flower. Still, I was missing the degree of abstraction I like until I came across a field in which the flowers had just been beheaded and felled into the paths between the bulbs—two straight, surreal rows of red against green.

With a fresh awareness of how hard it is to transcend clichéd images in the fields, I approached with the utmost respect the Frans Roozen gardens and greenhouse at Vogelzangseweg early one morning. Open to the public weekdays April to October, this famous bulb exporter presents



1000 varieties of tulips for visitors' visual and photographic pleasure.

I was astounded by the beauty that unfolded before my eyes. After I discovered that the best time to visit the greenhouse was between 11:30 and 2 p.m. (when most tourists have left for lunch, making permissible tripod photography easier), I returned the next afternoon. By midday, the sun begins to break through the haze and filter through the greenhouse glass to kick my *f*-stops into a safer depth-of-field range.

As I scanned for the ultimate flower on which to settle my lens, I was reminded of a discussion I had years ago with a friend about the nature of judgment, photographic selection in particular. We agreed that the Western mind is inclined to judge so: "This is the *best* Indian paintbrush in the entire alpine meadow. I'll photograph it."

My friend, a Buddhist, took a more gentle, less exclusive tact: "This flower *speaks* to me the clearest."

While shooting at Frans Roozen, I realized that I'm still trying to sort out this discrepancy in my east-west bifurcated psyche on a daily basis. At this lovely garden, I was put to the "best" test while selecting a few visually voluble flowers for some location studio photography. Relying on the ultimate flower photo cliché, I brought a piece of matte black construction paper to the gardens to use as a background for 60mm macro detail shots.

Asking permission of the Frans Roozen staff, I found a private spot to set up a mini-studio on a table, with the paper hung in a cyclorama fashion. A staff member made a few flowers of my choosing available to me. I moved the flowers into position as I looked through the viewfinder. A stool and tripod made this time-consuming process easier.

As for the light, while there was nice filtered light coming through the skylights, the flowers were on the flat side. I asked my husband to flip me some fill light via a Photoflex Lite-Disc from the patches of sun entering the warehouse. It worked, resulting in some wonderful macro images.

By the time I visited the extraordinary Keukenhof Gardens in Lisse—long considered the *pièce de la résistance* of the Dutch tulip experience with its six million tulips, narcissus, hyacinths and other flower bulbs spread across 70 acres—I was wiped out on tulip photography. While the paved

walkways, close-cropped lawns, streams and bridges did provide a lovely environment for an evening stroll, albeit with hordes of other tourists, somehow Keukenhof was a bit of a botanical zoo, especially after my spontaneous shunpiking in the fields where I chatted with growers, walked their fields, shot their wooden shoes in piles of blossoms and their baskets spilling over with cut tulip heads. Although it draws hundreds of thousands of visitors each year for the obvious reasons, Keukenhof remains a no touch, no smell, no muddy

clogs after the shot kind of place.

Yet, for flower aficionados, Keukenhof is still a must-see garden that will take your breath away. So is the Hortus Bulborum in Limmen, where centuries-old tulip varieties of every shape and shade grow in accessible rows in which you can stroll, stop, stare and shoot optically intimate abstract volumes of pure color—the ultimate symbols of "tulipomania."

If you're considering travel in Holland, contact: Netherlands Board of Tourism, 355 Lexington Ave., New York, NY 10017, (212) 759-8825. OP

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COLD
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Taking advantage of atmospheric color temperature to create more vivid images

TEXT AND PHOTOGRAPHY BY ADAM GIBBS



The word "photography" literally means to paint with light and, without it, we'd have a hard time capturing an image on film. The direction of light is important because it creates the texture, mood and dimension that we're seeking in the final image. More importantly, in color photography, the color of light and the way film records that light has a crucial role—it can draw the viewer's attention to an important element or add a great deal of impact to an image. How many times have you photographed a sunset because the colors were out of this world even though you have dozens of such images at home?

Many of today's daylight transparency films are manufactured to be used in an environment where the color temperature is around 5500 degrees K (Kelvin). The temperature 5500 degrees K can be regarded as photographic daylight, roughly sunlight plus sky light. As color temperature increases, the color of light emitted from a source changes in appearance from red to white to blue. Depending on where you live in the world, the average color temperature on a cloudless day is around 5500 degrees K. It's dependent on where you live because elevation, time of year, time of day and air quality can control the color of light around us. It

may be around 5500 degrees K on a sunny day at sea level in Vancouver, British Columbia, Canada but, in Mexico City at around 6000 feet, it may be closer to 7000 degrees K due to the increase in elevation.

You may have noticed this color shift when you've photographed a mountain scene on a sunny day, only to be disappointed when you get your slides back and find that the moun-

(Cont'd on page 74)

COOL-GREEN LEAVES are set against the intense orange and yellow tones of the sun piercing through the background (left).

Nikon F4s, Nikkor Micro f/2.8 105mm, Fujichrome Velvia, 15 sec. at f/8

THE WARM COLORS of the bright-red leaves jump out while the cooler colors recede (below, far left).

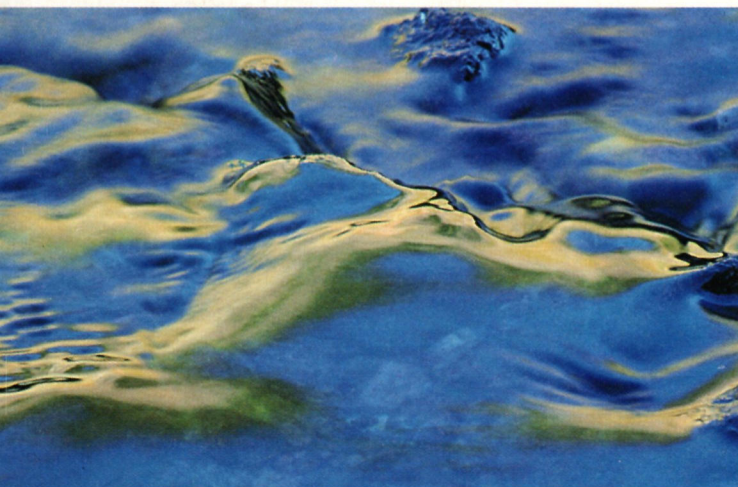
Nikon F4s, Nikkor f/4 200mm, Fujichrome Velvia, 1/30 sec. at f/4

THE BLUE CAST of the water in deep shadow is balanced by an area that reflected nearby sunlit trees (below, left).

Nikon F4s, Nikkor f/4 200mm, Fujichrome Velvia, 1 sec. at f/11

EARLY-MORNING SUN backlights fireweed (below). The sun's low angle kept the surface of the rocks in the shade, resulting in a cool-blue light.

Nikon F4s, Nikkor Micro f/2.8 105mm, Fujichrome Velvia, 1/30 sec. at f/11



TAMRON 200-400



An outdoor pro tests this new super tele-zoom lens for easy wildlife and nature close-ups

TEXT AND PHOTOGRAPHY BY JOHN SHAW

It has been quite a while since any manufacturer has offered a constant-aperture, long focal-length zoom lens. Once upon a time, Nikon had a 200-400mm $f/4$ lens, while Canon sold a 150-600mm $f/5.6$ in the manual-focus FD mount. These lenses haven't been produced for years; consequently, finding a used one in good shape is pure chance. If you get lucky and do find one, paying for it means maxing out your credit cards and then some.

The few long zooms available today are in the 100-300mm range. Typically, these are variable-aperture lenses, changing from $f/4.5$ to $f/5.6$ as the lens is zoomed. The very few lenses on the market that extend their reach past that 300mm focal length are only available in manual-focus models. Most of these fall into the $f/5.6-8$ aperture

class. What the world really needs is a constant-aperture, normal-speed, really long focal-length zoom lens that autofocuses with most popular cameras. In other words, a state-of-the-art lens.

Tamron has heard the challenge and answered it. The manufacturer is now producing a 200-400mm LD lens with a constant $f/5.6$ aperture throughout the zoom range. It's available in dedicated fixed mounts for Canon, Minolta and Nikon D autofocus cameras. Indeed, the lens has been obviously designed as an autofocus lens, not a manual with AF tacked on. The "LD" denotes the fact that two low-dispersion glass elements are incor-

porated in the lens design to compensate for chromatic aberrations.

Those LD elements are good news. Tamron wants to make the lens sharp when wide open at $f/5.6$, exactly where you'll use it a lot. After all, what's the point in having a 300mm or 400mm lens that only becomes critically sharp when stopped down to $f/11$ or $f/16$? When you're shooting wildlife, which is the obvious use for this lens, you'll often need to shoot at the fastest shutter speeds possible. Hence, the wide-open aperture needs to be sharp.

A constant aperture is, in my opinion, a real blessing. If you're working in an autoexposure mode, it's no big deal that the aperture changes as you zoom a lens; the exposure mode will compensate for any f -stop change. But shoot with manually set exposures (yes, some of us still do), and variable-aperture lenses can be a real pain. Some lenses change apertures by up to a full f -stop or more as you zoom them. Correct exposure at one end of the zoom range is *not* correct exposure at the other end.

The Tamron 200-400mm also features a rotating tripod collar with a fairly large foot (the flat part that mates with your tripod head). Two tripod sockets in the foot let you double-fasten a quick-release plate or change the





balance point on a tripod when you switch camera body models. Toss in a 4½-inch-long hood that bayonets into position (and reverses for compact storage), and it's apparent that Tamron has thought out the whole package. The barrel of the lens has a four-inch-wide zoom ring that's covered with a non-slip rubberized material. At the extreme front end of the lens is a one-inch-wide manual-focus ring with the same covering. Both are easy to grip, even when you're wearing gloves.

Here are some specifications for the Tamron:

Focal length: 200-400mm
Aperture: f/5.6-f/32
Minimum focus: Just over eight feet
Filter size: 77mm
Length at 200mm: 7½ inches
Length at 400mm: 11¼ inches
Weight: 46.6 ounces

The last four specifications listed are very important. While the Tamron 200-400mm is designed as a wildlife lens, you'll want it to do double-duty for landscape shooting. A standard 77mm filter size helps when it comes time to add a polarizer or other filter. As you zoom and focus, the front end of the lens doesn't rotate, which makes using a polarizer a lot easier.

Check those specifications again as to weight and size. This is a reasonably compact lens. In fact, it's almost the exact same size and weight as the Nikon 80-200mm f/2.8 AF lens. The Tamron is one ounce heavier, but about ⅜-inch shorter at the 200mm position than the Nikon. In other words, if you're concerned with the size and weight of a lens for backpacking or if you just don't want to carry a large, heavy lens, the Tamron fits the bill.

Here comes the best part: Actual street price for the lens is in the \$600 to \$700 ballpark—not bad when you consider that you're getting a 200mm,

300mm and 400mm and everything in between. Compare the price of the Tamron against the 400mm f/5.6 APO lenses on the market. Those offered by other lens-only manufacturers retail for about \$400 to \$500.

A maximum aperture of f/5.6 is pretty normal for a 400mm focal length. Tamron made the lens this speed and not any faster in order to keep both the cost and size manageable. Just remember that if you add teleconverters you'll lose some autofocus capability. This is true with all lenses at effective apertures much less than

f/5.6, and this one is no exception. Add a 1.4X teleconverter, and you've effectively got a 280-560mm f/8 lens; add a 2X teleconverter, and it's a 400-800mm f/11 lens. You can focus manually, but an f/8 or f/11 lens is pretty slow for wildlife work. Stick to the straight lens by itself for best results.

When I tested the Tamron 200-400mm, autofocus worked properly, all exposure modes performed well, I could rotate for vertical/horizontal easily, and manual focus was simple—all in all, the only choice in a really long focal-length AF zoom. **OP**

*Imja Khola Valley, Nepal.
Photo by Dan Bouchard.*

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E A G L



Jack Barrie's photographs of waterfowl and raptors in flight first appeared in magazines about 10 years ago. There have been thousands of sales since, and his photographs have illustrated books like *The Magnificent Voyageurs*, *Sovereign*

Wings and *Flight*. In addition, he has been

involved with several high-profile, international advertising campaigns—an impressive record considering Barrie was a member of the Royal Canadian Mounted Police (RCMP) for 32 years and took up photography as a hobby barely 15 years ago.

Following a stint as Western Canada's first enforcement officer with the RCMP Migratory Birds Section, Barrie became detachment commander at Fisher Branch, then sergeant in charge of the RCMP Headquarters Homicide Squad in Winnipeg. Promoted to staff sergeant in 1980, he was appointed chief of police at Portage la Prairie. After the hectic pace on the homicide squad, his new job seemed like a holiday. His wife, Stella, was working and their three children were grown, so he decided to take up a hobby.

Several hobbies were considered as work demands lessened, then discarded as mundane or unchallenging. Barrie finally concluded that photographing birds in flight would allow him to combine his long-ago acquired knowledge of waterfowl and their habitat with his hunting and skeet-shooting skills. So, with virtu-

E F



Jack Barrie combined his migratory-bird knowledge with his skeet-shooting expertise to develop an in-depth portfolio of the predator's aerobatic abilities

BY ROBERT H. JONES
PHOTOGRAPHY BY
JACK A. BARRIE



ally no experience other than taking police photographs to be used as evidence, he purchased his first SLR and set out for Delta Marsh.

Unfamiliar with the demands of wildlife photography, it took a year of trial and error with increasingly stronger optics before Barrie finally settled on a 500mm lens. A year later, having mastered the basics, he decided waterfowl photography would be his next career. With Stella supporting him all the way, he took out a substantial bank loan, then ordered four Nikon F3 bodies complete with motordrives, NiCd batteries and chargers and two Nikkor lenses: a 600mm *f*/4 and a 300mm *f*/2.8.

Next on his agenda was learning the intricacies of his new equipment. The Barrie house faced a main thoroughfare with a side street ending directly in front of the living-room window. Two blocks away, a railroad overpass crossed the side street. Using an empty

NEAR MISS (above):
Taking flight, this eagle was too low and brushed the top of Barrie's blind.

Canon EOS-1N, Canon AF 600mm *f*/4, Kodachrome 64, $\frac{1}{500}$ sec. at *f*/4

DOGFIGHT (opposite):
Two eagles are engaged in very-close-quarters aerial combat over a scrap of salmon.

Canon EOS-1N, Canon AF 600mm *f*/4, Kodachrome 64, $\frac{1}{500}$ sec. at *f*/4



PULLING G'S (above, left): *In a near-90-degree bank to the left, the eagle pulls off a high-G's maneuver with the grace of a top-gun pilot.*

Canon EOS-1N, Canon AF 600mm f/4, Kodachrome 64, $\frac{1}{600}$ sec. at f/4

MAX GLIDE (above, right): *The eagle airframe sports minimal frontal area and the wing airfoils are cleaned up for sail-planing in search of prey.*

Canon EOS-1N, Canon AF 600mm f/4, Kodachrome 64, $\frac{1}{600}$ sec. at f/4



camera on a tripod, he practiced panning by tracking cars traveling both ways across the overpass and constant focusing by targeting vehicles on the side street as they approached or departed. Two weeks into his training plan, Barrie still found panning smoothly difficult because his shoulder movements created a distinct wobble. After explaining the problem to Stella, she solved it by tying two broom handles to the tripod head, then tying the free ends to his shoulders. It worked. The camera and lens suddenly seemed like an extension of his body. From the broomsticks evolved the custom-built metal shoulder braces Barrie now employs and his technique of panning with his entire body.

"From the beginning, I found photographing birds in flight much more challenging than shooting with a shotgun," says Barrie. "A shotgunner must know the weapon's shot pattern, be able to determine a bird's distance, track its flight and lead enough to com-

pensate for its speed. If the calculations are off, however, there's always a chance that one pellet in the pattern's outer fringe might bring the bird down. A photographer must know the camera, lens, film, light conditions and the wind's direction and speed. While tracking a bird and keeping it positioned in the viewfinder, the focal point—usually its eye—must be kept in sharp focus. Unfortunately, if the shutter speed is too slow, or the panning motion doesn't exactly match the bird's speed or its eye isn't sharp within that extremely shallow depth of field, there are no stray pellets. If a photograph isn't perfect in every detail, it's a total miss."

After retiring from the RCMP in 1985, the Barries relocated to Courtenay, British Columbia. Although their spacious home and studio overlooks a major agricultural land reserve that's a wintering ground for more than 1000 trumpeter swans, Barrie is far more interested in photographing bald



eagles on local beaches. Weather permitting, he averages 12 hours a day at it, often for weeks on end if conditions remain good.

On a typical winter eagle shoot, Barrie starts setting up on a beach shortly after 6 a.m. Although dressed warmly, he discovered camouflage clothing was counterproductive. "It's better to let the eagles see me and grow used to my presence," he explains. "Once they decide I'm no threat, they ignore me. The exception is close-up work, which is when I use a blind."

Barrie says the area selected for his tripod must be fairly flat and absolutely clear of debris. "If I spot a bird coming from one side or the other, my body movements are totally by reflex. The least distraction could be disastrous. I spread my feet well apart, then swing the lens to locate the bird. I'm intentionally off balance, with both shoulders in the braces to control horizontal movement. My right hand is on the lever to control elevation, help

pan and fire the motordrive. My left hand rotates the lens in its gimbals, controlling the horizontal and vertical tilt, and I have my right eye jammed tight against the viewfinder cup, which helps steady the camera."

I've watched Barrie in action on several occasions. Standing behind his tripod with those braces on his shoulders, he reminds me of a World War II anti-aircraft gunner tracking an enemy airplane. A vignette from a recent outing was typical: Barrie leaned precariously far to the left as the lens swung to pick up an eagle approaching swiftly from the right. As it drew closer, Barrie bent slightly at the knees and the slowly swinging lens raised accordingly. As if on cue, when the eagle was directly in front, it suddenly swerved toward us, then plummeted like a rock before flaring its wings and banking away. Throughout this display, Barrie reacted by straightening his knees to lower the lens, left hand

(Cont'd on page 94)

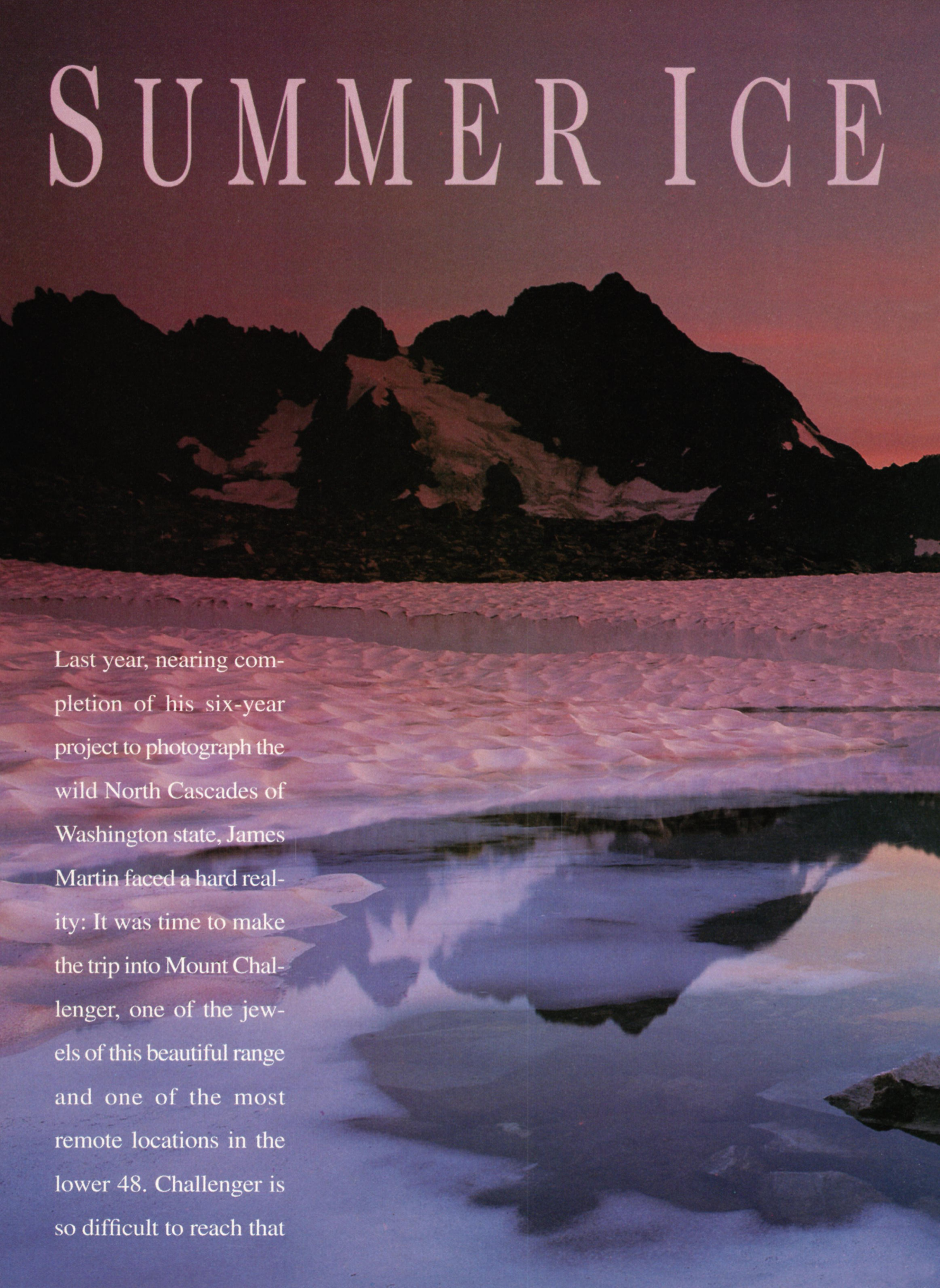
DIVE BOMBER (above, left): Wingtip feathers fanned as airbrakes limit the speed of the predator in a near-vertical dive for fish.

Canon EOS-1N, Canon AF 600mm f/4, Kodachrome 64, $\frac{1}{500}$ sec. at f/4

LANDING DIRTY (above, right): Flaps down, gear down and spoilers deployed, the eagle is flared for a rough field landing on the rocky shore.

Canon EOS-1N, Canon AF 600mm f/4, Kodachrome 64, $\frac{1}{500}$ sec. at f/4

SUMMER ICE

A photograph of a mountain range at sunset or sunrise. The sky is a deep orange and red. The mountains are dark, with patches of snow or ice. In the foreground, there is a body of water reflecting the mountains and the sky. The water is calm, creating a clear reflection of the scene above.

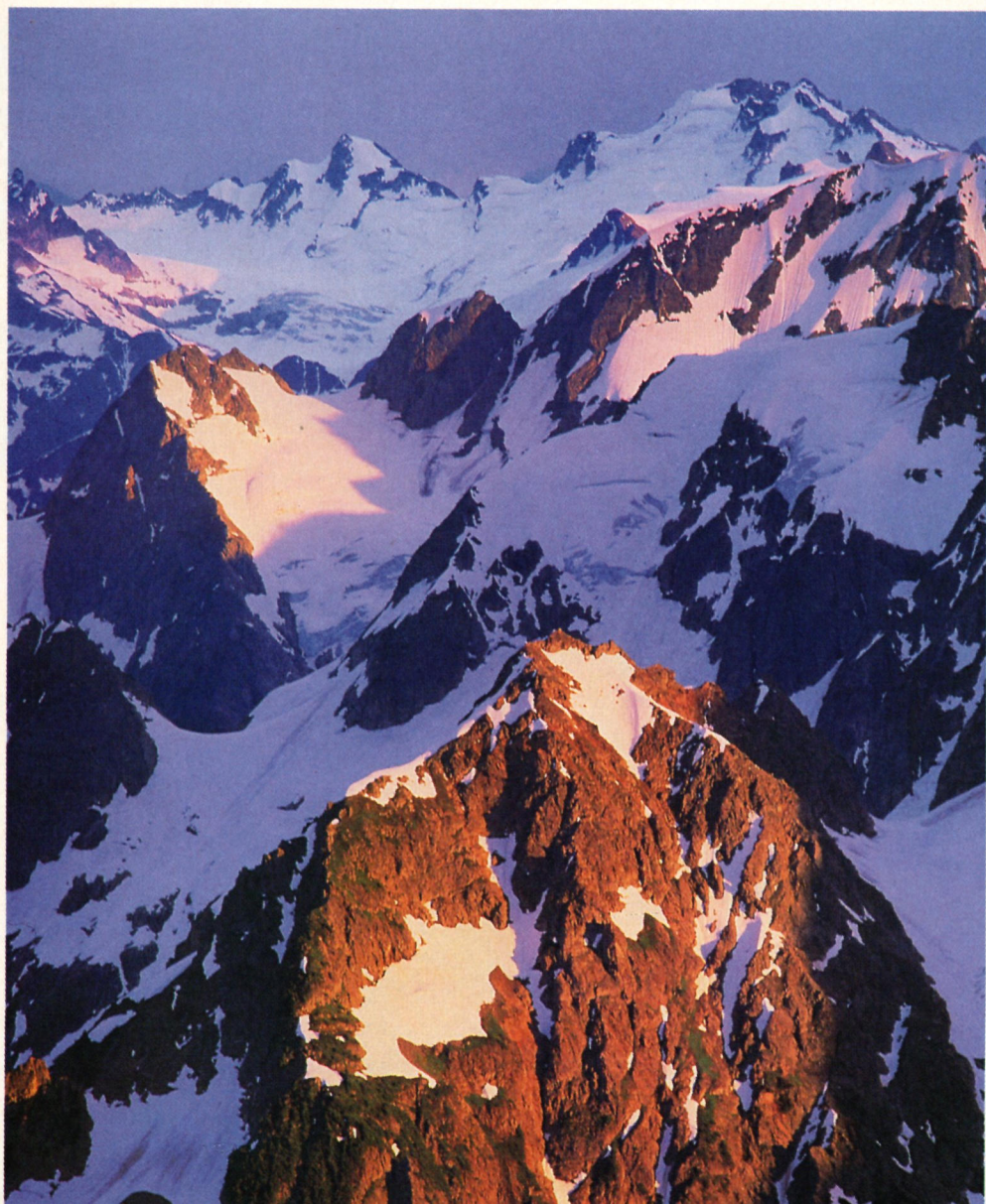
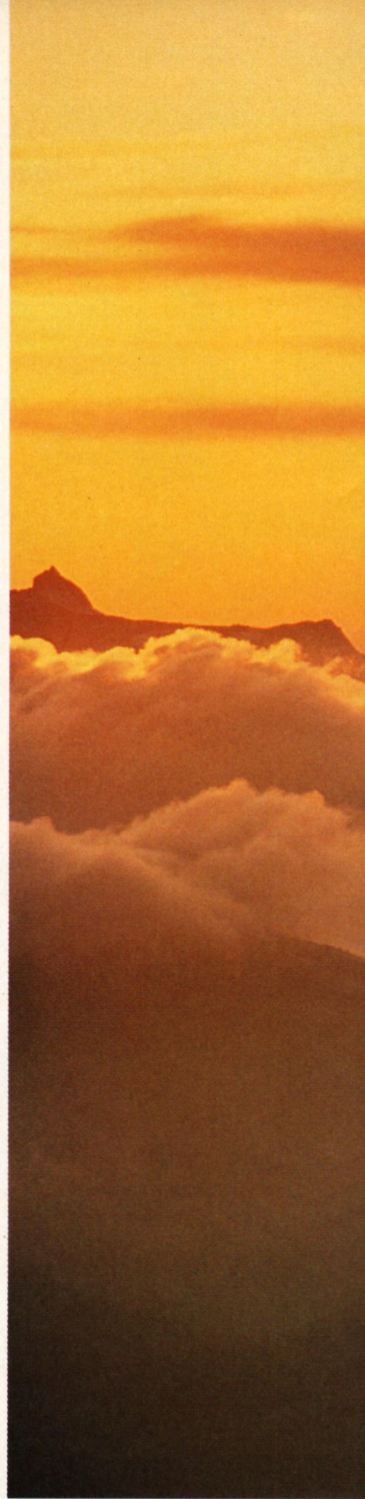
Last year, nearing completion of his six-year project to photograph the wild North Cascades of Washington state, James Martin faced a hard reality: It was time to make the trip into Mount Challenger, one of the jewels of this beautiful range and one of the most remote locations in the lower 48. Challenger is so difficult to reach that

Washington state is home to one of the most inaccessible ranges in North America, the North Cascades, where snow and ice last all year. Those who make the effort can come away with spectacular images. BY PETER POTTERFIELD • PHOTOGRAPHY BY JAMES MARTIN



KOOL-AID LAKE: *This tarn is the first camp on the Ptarmigan Traverse, a five-day wilderness jaunt weaving through the crest. The Cokin two-stop graduated neutral-density filter lends a slight magenta cast to a haze-filtered sunset scene.*

Pentax 6x7, Pentax 55mm,
Fujichrome Velvia, f/16





very few climbers go there, much less photographers. But Martin, an eccentrically independent and committed artist, was unfazed.

Carrying ropes, ice tools, crampons, camping gear, camera, lenses and tripod, he hiked four miles from the nearest road to 5100-foot Hannegan Pass and down into the Chilliwack Valley for another five hot miles along the river. He traversed the raging stream, then made the sweaty climb with his load up to 5200-foot Whatcom Pass. There, Martin saw his route was blocked by a 7600-foot mountain. He'd have to climb it—not normally a problem for a technical climber such as Martin, but a dicey proposition when carrying a load no self-respecting Sherpa would consider.

Slowly and carefully, he picked his way up talus and

TARN ON TRAPPER PEAK (opposite, top): The peaks above the Cascade River valley guard some of the wildest territory in the range. This tarn rests on the crest of Trapper Peak's summit ridge.

Pentax 645, Pentax 45mm, Fujichrome Velvia, *f*/16

DOMES PEAK (opposite, bottom): An hour before taking this shot, a terrific lightning storm tore through the area. Trees exploded after being hit far below camp atop Sahale Peak.

Pentax 6x7, Pentax 300mm, Fujichrome Velvia, *f*/8

WHATCOM PEAK (above): After climbing the North Face with full packs, we camped on a snow rib near the summit and scrambled to the top for sunset.

Pentax 645, Pentax 300mm, Fujichrome Velvia, *f*/8



MOUNT CHALLENGER: *As my party approached the summit of Challenger, the peaks of the Northern Pickets loomed in the background. The tripod remained in camp.*

Mamiya 6, Mamiya 50mm, Fujichrome Velvia, f/5.6

rock slabs and gamely forged the narrow 1500-foot ridge of steep mixed snow and rock. He put on crampons and descended a dangerously icy slope to Perfect Pass. By the time he reached the Challenger Glacier and climbed, exhausted, up to his campsite at 7000 feet, he had traveled 20 miles in three days. His pack weighed 70 pounds, almost half his weight, partly because Martin's dedication to perfect sharpness required a big image—that meant a Pentax 645 and Gitzo tripod with a Foba ballhead.

"I got two good images out of that trip," Martin recalls. "And I'm very happy with that." One of the most successful shots was a close-up of alpine fireweed with Mount Challenger looming in the background. "There's no way in the world to get that shot except put all that gear on your back and walk in there."

As is often the case with persistence, the 44-year-old Martin's refusal to make compromises has led to success. His work has appeared in *Smithsonian*, *Outside*, *Sports Illustrated* and other major magazines, as well as award-winning books such as *Tentacles: The World of Cephalopods* and *The Mas-*

ters of Disguise: A Natural History of Chameleons, a collaboration with Art Wolfe. His large portfolio of stock images are marketed exclusively through Tony Stone International.

If Martin's willingness to take on unreasonable difficulties to get the shots he wants is one reason his work stands out, his early exposure to photography is another. "When I was in high school, I hitched to Yosemite Valley on weekends," he remembers. "I'd follow Ansel Adams and his students around the valley—I couldn't afford to sign up for the course myself—trying to understand how he created those images. The grainless clarity of those photographs knocked me out and, since then, I've aspired to that level of technical excellence."

Because Martin has wide interests and is drawn to the unusual, his work by default is done under difficult circumstances. But the North Cascades remain a completely unique realm, one so difficult in which to work that every shot extracts a high cost in terms of physical effort, unreal hardship and environmental hazard. It's a place so troublesome to get to that a technical mistake can mean a pho-

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Texas Wildflowers - Rod Planck - April 7-9
Smokey Mountains - Galen Rowell - April 28-30
Sharon Woods - Pat O'Hara - May 5-7
Cape May - John Shaw - May 19-21
Grand Tetons - John Shaw - June 2-4

Olympic N.P. - Galen Rowell - June 9-11
Glacier-Waterton N.P. - Bryan Peterson - June 16-18
Week in the Smokies - Workshop/team - July 23-30
Yellowstone N.P. - Rod Planck - Sept. 8-10
Rocky Mountains - Rod Planck - Sept. 15-17
Arches N.P. - Galen Rowell - September 22-24
Acadia N.P. - to be announced - October 6-8
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tographic opportunity is lost forever.

The North Cascades cover 1000 square miles of all-but-inaccessible beauty and stark contrasts tucked away in the wild northwest corner of the country. The dramatic climax of the Cascade Range, which runs from California's Mount Shasta to the Canadian border, harbors big glaciers and ice-fields surrounded by jagged, polished peaks of red and gray rock. The most scenic areas were preserved in North Cascades National Park in 1968.

The higher alpine reaches contrast sharply with clear, flowing rivers and wet, lush and rugged valleys, where rare wildflowers flourish. Adventure-some climbers are still making first ascents in this pristine environment, and there are places where humans have never gone. If Martin wasn't an accomplished climber, he could never have even considered documenting the range to the extent he has.

"I'd walked a thousand miles in the Sierras and nearly that much in the Canadian Rockies before I encountered the North Cascades," Martin says. "Noth-

ing in the contiguous United States compares with that austere beauty—or with that difficulty of access. The North Cascades are characterized by a ribbon of jagged peaks winding between deep, dark river valleys. It's an incomparable place, but those green valleys are vicious jungles of devil's club and slide alder that rip at your skin and make progress all but impossible."

In one of the wildest parts of this wilderness, the Picket Range, Martin was slowed to a mile a day as he fought his way into the high country. On another outing, Martin and a companion were caught in a desperate situation on a peak called the Triplets and, with ice tools and crampons, made a desperate ascent of a sheer ice face that was, in Martin's words, "a cluster of detached icicles." They survived, but just barely. When asked why he does it, he shrugs and says, "The rewards are great. This area is like the Alps without the telepheriques and tourists. It's true wilderness, and the opportunity to work with that dramatic landscape, that wonderful changing light, makes it worth the trouble."

Martin's decision to photograph this wild corner of the world has also pit

him against persistent adverse conditions and climate considerations that make photography extremely problematic. Overcoming those challenges requires not only strength and skill, but a wily resourcefulness.

"The Cascades are wet, with up to 150 inches of rain a year," Martin says. "That means you've got to keep your gear—all of it—in sealable plastic bags inside the camera bag inside the pack." While the weather can shut down all but macrophotography, it can also enhance a scene to the point where the weather becomes a *part* of the landscape. "The right amount of clouds and mist can add drama that makes an image even more exciting." Keeping lenses and cameras clean in the wild and wet poses another problem, one that can be overcome only by "constant vigilance." And the selection of that photographic equipment becomes another crucial factor in the equation.

"Like they say in the garage, there's no substitute for cubic inches," Martin laughs. "Medium format is mandatory to get the sharpness I want—and to get art directors to look at my pictures." That meant, until recently, 6x7 or 645 formats. The rigors of the Challenger



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trip were so memorable that they set him to looking for alternatives. He finally found a format that gave him a 50-percent weight advantage.

"For years, it was only by lugging absurd loads that could I get the results I crave," he says. "It's brutal, mulish work and I hate it. Just lately, I've found a compromise I can live with: the Mamiya 6. It's light, and it's three lenses limit temptation. The leaf shutters save significant weight in two ways: The rangefinder subtracts the weight of the mirror and its housing, and the tiny shutters cause little vibration so I can get away with the smallest Gitzo and a modest ballhead. I was leery at first, but so far the glass seems unsurpassed. I discovered right away that the images were knockouts."

But the lighter-weight gear isn't without its cost. "Rangefinders are less convenient than TTLs," Martin says. "For instance, the parallax compensation is imperfect when you're trying for absolutely perfect depth of field. You could accidentally include a stray, distracting branch or rock in a wide-angle shot and that could sully your composition.

"Another problem is that you can't

see the effects of a polarizer—that's a drawback in the mountain environment—and there's no TTL metering to compensate for the loss of one or two stops." With no through-the-lens viewing, the use of the graduated neutral-density filter becomes more time-consuming and less precise. Adds Martin, "So suddenly, you're up there with the wind blowing and the light changing, and guesswork enters the equation. Not good. But so far I've been willing to think a little more to pare a lot of weight."

Martin compensates when using the graduated neutral-density filter by "filter bracketing" to ensure he gets the line between light and dark in the right place. "When you've spent three days just getting into the high country, every shot is a once-in-a-lifetime opportunity."

The polarizer and the graduated neutral-density filter are the only filters Martin carries. He's careful to dial in only a "little polarizing effect" because he has found it's easy to over-polarize in the high country with the newer, more vibrant films. Martin prefers Velvia, which he uses in every instance except when climbing, a situation where hand-held shots are

required. In that case, he uses Lumiere X or Provia pushed one stop.

But it's the way James Martin uses his *understanding* of the equipment—and its shortcomings—that permits his artistic expression to look effortless and allows the photographs to speak for themselves. The landscape holds center stage in these images, but it's the subtle interplay of light and shadow, cloud and reflection *against* that rugged grandeur that makes them memorable.

"The North Cascades are savage and inhuman," Martin says. "We may only visit, not take up residence. I think my pictures remind people of that but, at the same time, offer a rare glimpse into that forbidden beauty." **OP**



James Martin



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Black & White UNDERWATER

Deep under the ocean, light and form—not color—are the important elements, so Ernie Brooks finds panchromatic film to be a logical though unique choice for rendering his viewing experience

BY JAMES LAWRENCE • PHOTOGRAPHY BY ERNEST H. BROOKS II

GENESIS (left) creates a view of the sun in the very earliest life form in the sea. Photographed near the surface off Monterey, Calif.

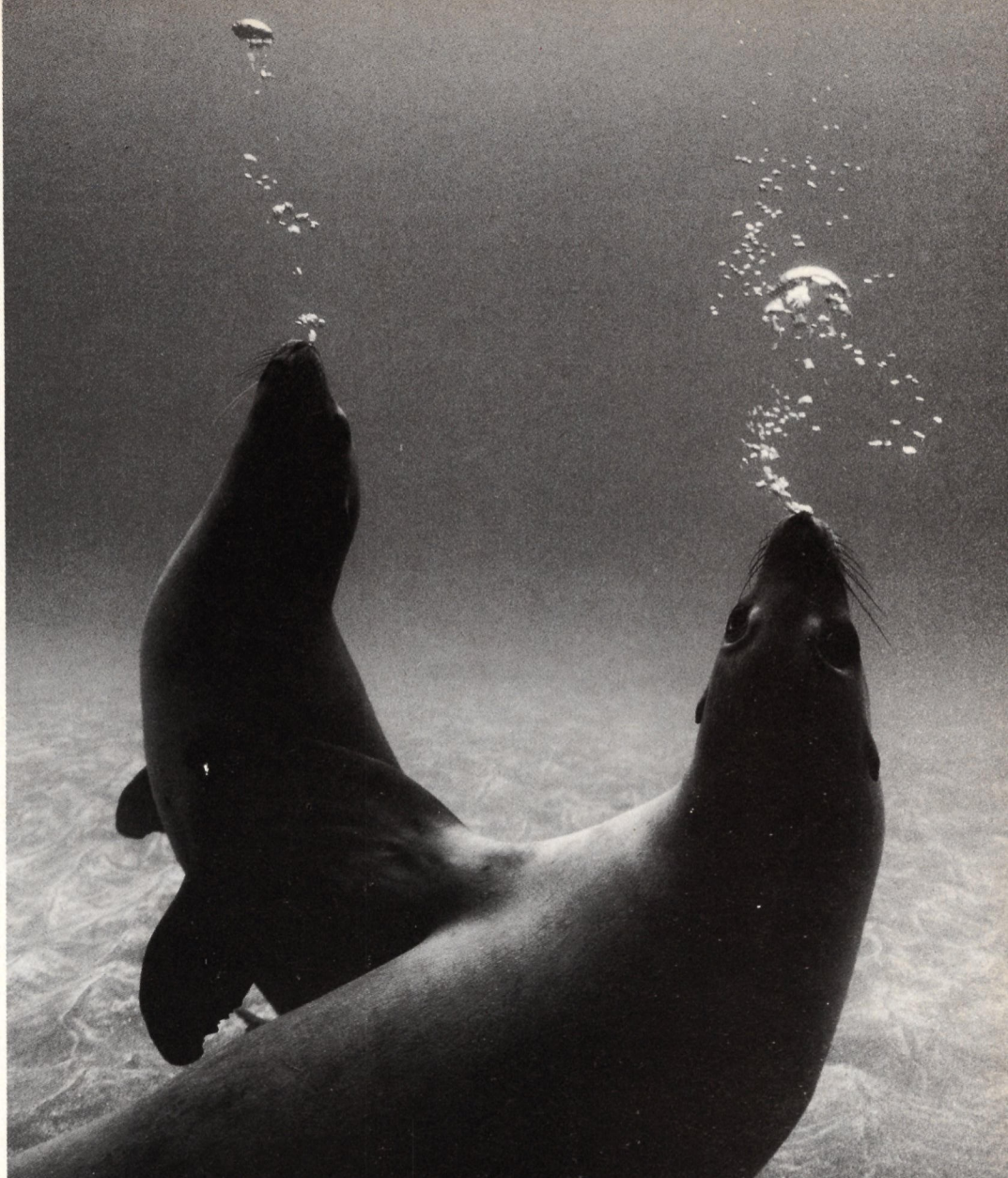
Hasselblad Super-Wide C,
Hasselblad 38mm, T-Max
100 (pushed 2 stops), ISO
100 rated to 400

CLOWNS OF THE SEA (right): A special encounter with two California sea lions off Santa Barbara Island, about 60 nautical miles on a course of 140 from Santa Barbara harbor.

Hasselblad Super-Wide C,
Hasselblad 38mm, T-Max
100 (pushed 2 stops), ISO
100 rated to 400

RETURNING HOME (below): There's a special feeling that overtakes the diver-photographer after a photo shoot in the sea, a thirst for the quiet light, to descend into the liquid space, weightless, soundless, suspended in time. "Returning Home" is a merging view from the topside world to a place where all life forms are dependent on one another.

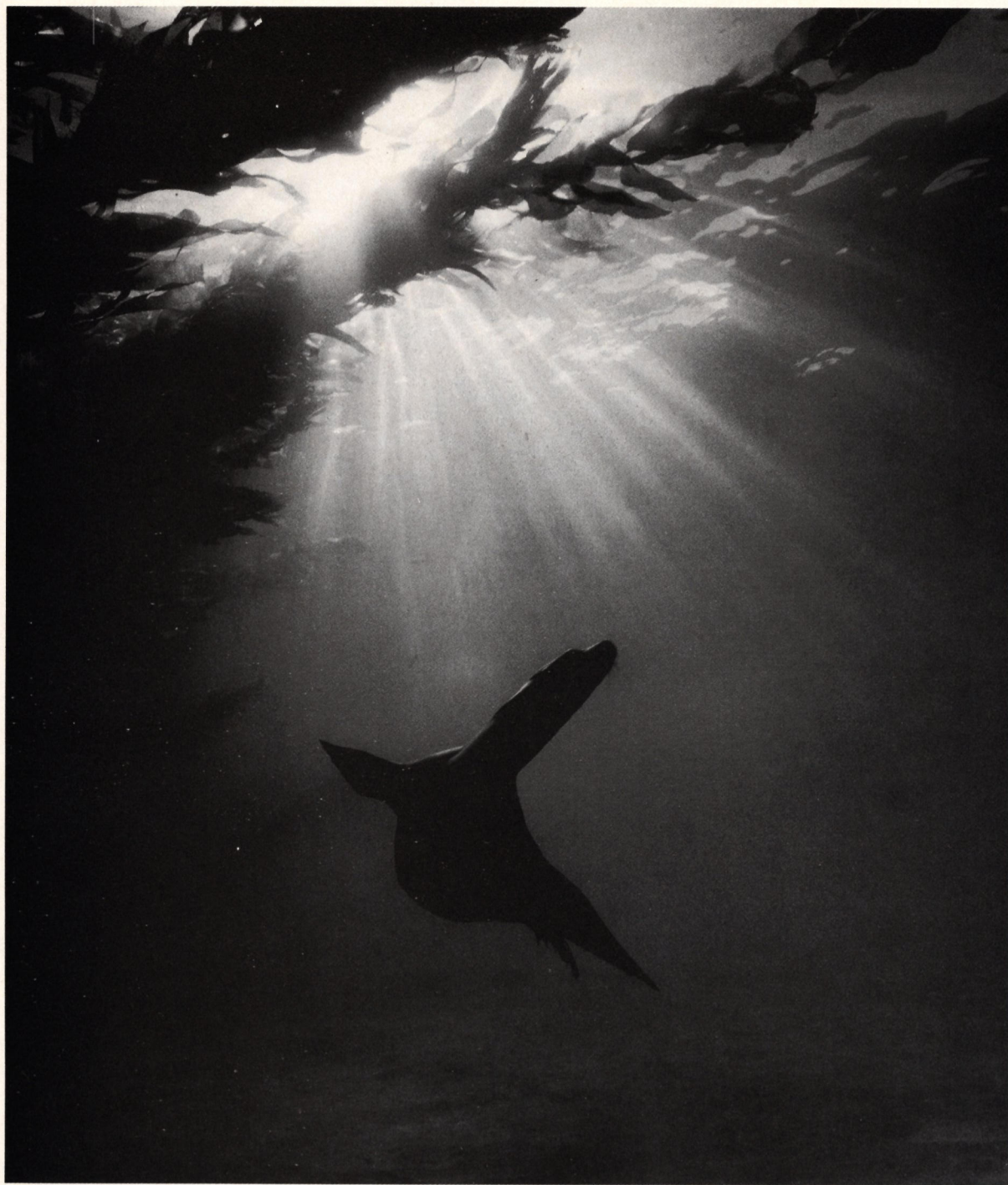
Nikonos V, 20mm, Kodak T-Max
100 rated at 400



Color is not permanent. Even Cibachrome is a nice material, but not archivally as stable, nor does it have the tonal qualities that black-and-white collectors like.

—Ernest H. Brooks II

The ageless photographer lowers his lean, tanned body into the slate gray of the dawn Pacific. Forty years of scuba and snorkeling have taught him how to ignore the first bite of the cold water as he positions his snorkeling mask over crinkled, friendly eyes. He lowers the time-worn Hasselblad in its waterproof housing into the gentle swells and prones out with a strong kick of the flippers. Just ahead waits the



***WINGED ANGEL:** I've discovered that early morning has been the best time frame to capture the animated movements of the California sea lions at Santa Barbara Island. Sunrise in the early morning produces a more delicate effect on my subjects.*

waving kelp bed, a regular haunt. His mind blazes with visions of his favorite undersea subjects, the sea lions and California harbor seals. But he'll take whatever he gets, knowing the real transmutation from ordinary to magic comes later in the darkroom.

The early-morning light is clear but dim beneath the waves. His diver's eyes take in the muted yellows of vast kelp forests, earth tones of brown gor-

gonians, blue shafts of sunlight-soaked water, darting silver bars of bonita and minnow schools, a red and brown sheep-head...pure color, color everywhere.

And he sees it all in perfect black-and-white.

"Most photographers today shoot color," says Ernie Brooks, president of the internationally renowned Brooks Institute of Photography in Southern California. On a crisp, cool afternoon,

he sits surrounded by a gallery exhibit of his life's work in black-and-white undersea photography. A whole section of Bill Robbin's Ocean Gallery in Santa Barbara is devoted to Brooks' handsomely mounted, fine-art black-and-white prints and posters of pin-nipeds, undersea vistas and sharks. It's a tasty, well-presented display and that's good, since its goal is to attract serious collectors of photographic art.

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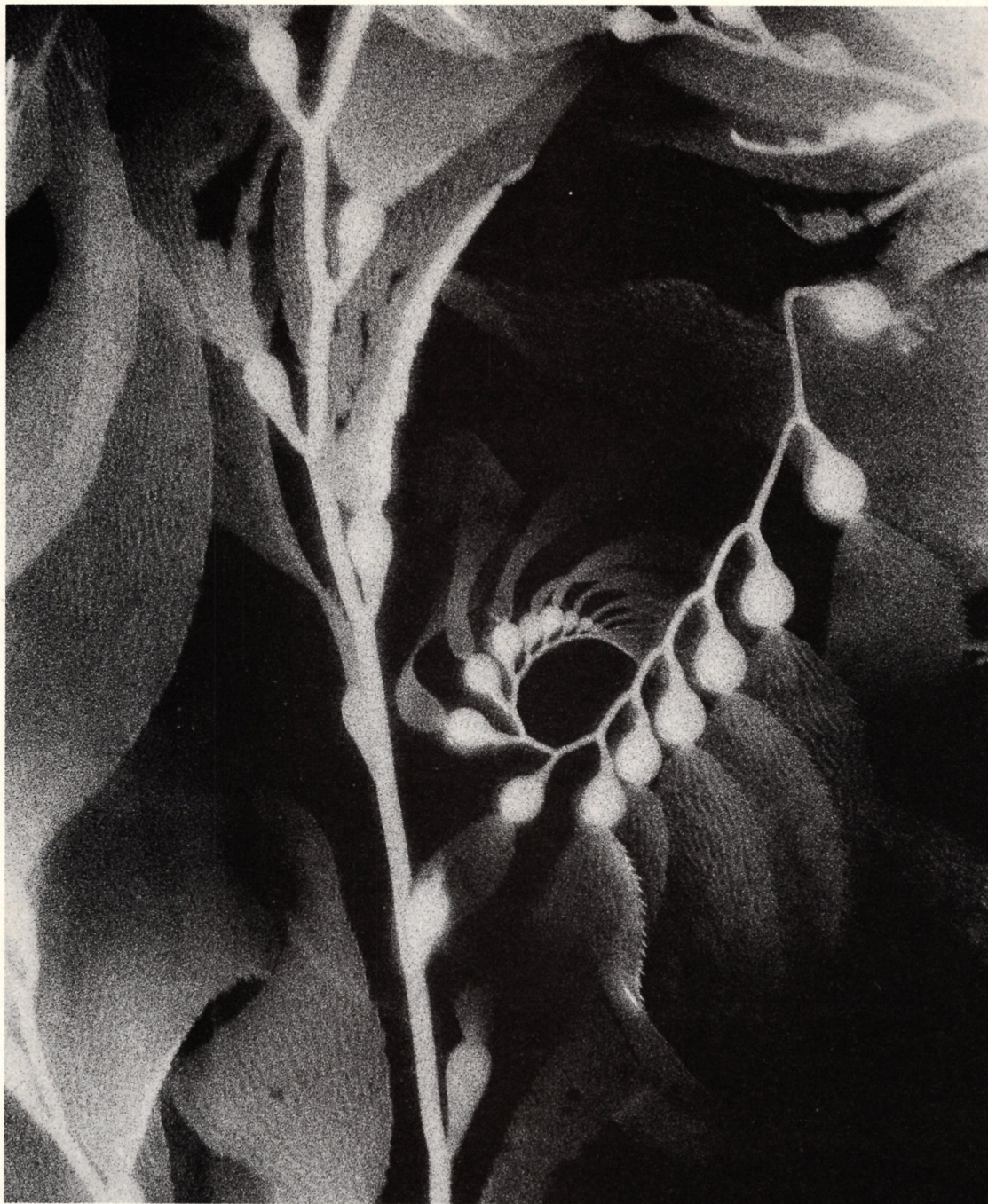
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MACROSYSTIS: *Looking up through a kelp forest toward the surface near Santa Rosa Island. Here, the tremendous amount of IR energy found in macrosystis or kelp is evident, and infrared film aids in delineating the many shapes and forms of each individual plant. Kelp can grow up to 100 feet in length from the bottom to the surface; it's the fastest-growing plant on Earth and grows up to 24 inches in a 24-hour period.*

Nikonos V, Nikonos 20mm, Kodak Infrared, R filter

Brooks (he tells his students to just call him Ernie) breaks into his characteristic warm, broad smile. "The ocean is an extremely colorful place...if you bring light. But my work is all ambient. I love the ambience of the sun."

Even though his students these days at Brooks Institute, whose graduates have blazed new trails in photography for decades, are more intrigued

with color, Brooks eschews the eye-candy thrills of saturated hues in favor of the monochromatic tonalities and total control that comes with black-and-white photography and printing.

"The most important thing in my career now is to make my mark with quality and style. That's why I want to be in the gallery marketplace." Brooks' black-and-white prints fetch

prices up to \$3,000 and more. Nice for the piggy bank, deeply satisfying for the soul of the artist. "I want something that lives on, that has a singular message of its own within the realm of black-and-white photography." One glance at his superbly executed prints and you understand why Ocean Gallery's Bill Robbins calls him "the Ansel Adams of the sea."

Why Black-And-White In A Color World?

But most of us can't expect to dive right into black-and-white gallery presentations with our flippers churning. What use then of black-and-white in a photographic world awash in Velvia and Lumiere colors? One obvious benefit: You can get your hands "wet" in every phase of the process from previsualization to developing the film to pulling the master print, Ansel Adams-style.

Learning to witness the scene and have a feeling for how you'll tweak the print in the darkroom goes a long way toward acquiring the ability to *see* photographically. The next step is artistic expression, and a perfect example lies in one of the Ocean Gallery images—a shot of a brown gorgonian titled "Magic Fingers." To the naked eye, the underwater colonial organism looks like a dull-brown sea fan. To the black-and-white eye of Ernie Brooks, the edges of the fan, waving in the water breeze and kissed by dim sunlight, resembled beckoning fingers.

"I wanted that," Brooks says, and you see the hunger of the artist flash in his eyes. "I knew I could take something ordinary, something mundane, like an old piece of kelp or this brown gorgonian waving in that beautiful ambient light, and make an extraordinary statement from it. As soon as I saw it, I knew I'd want to darken places so the light on those tips would come forward."

The result is a mystical rendering of the sea fan that glows with a seemingly inner light.

You're Gonna Get Wet

Before you can make that master print, you have to get wet. Just how good a diver do you have to be to get good underwater photography? The Ernie Brooks Quick Disaster Tour provides the answer.

The nightmare fantasy begins and ends in one spot: You're in scuba gear underwater at night, with 2000 feet of deep sea below you. You're there to photograph stinging jellyfish at close range, and you don't know much about buoyancy control, navigation or the natural human feelings of disorientation you'll need to talk down in your head—and you're trying to get the same shots Ernie Brooks is getting.

"No way it's going to happen," says Brooks, with an adamant shake of the head. "We require advance certification at Brooks, and I'd strongly suggest anybody serious about underwater photography do the same. An advance rating gives you navigation, CPR, survival skills,

night-diving experience, all the things you'll need to be comfortable. You're not going to shoot well, or even safely, unless you're comfortable with your diving. That's number one out of the gate."

Count on spending roughly 100 hours to get that rating over a period of a few weeks. Need more motivation? Ernie Brooks, 60 years old, has the physique and lean muscle tone of active men 20 years his junior.

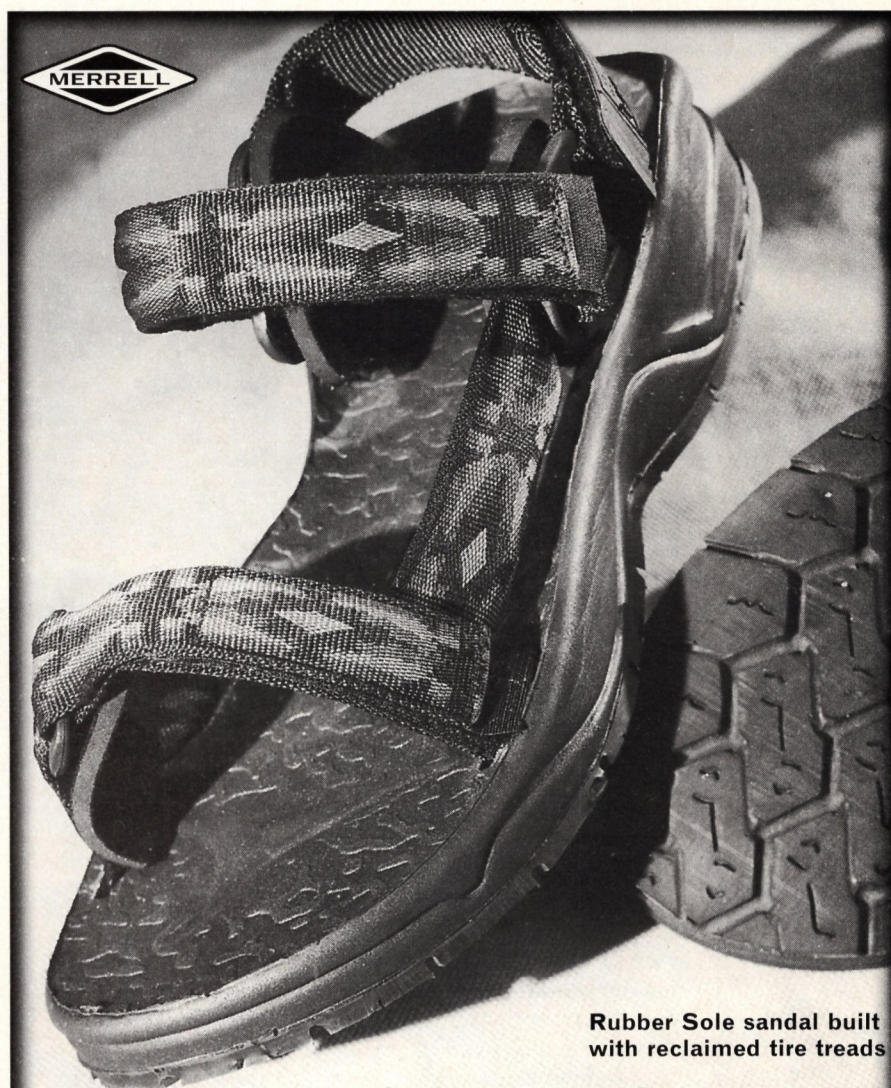
Next Step: Gear Up

Underwater photographic technology has enjoyed the same boom in the

last several years as above-water gear. Nikon's submersible autofocus Nikonos system, in addition to watertight, built-in flash, point-and-shoot systems from Canon, Minolta and the other major makers, has brought underwater imagery to the weekend snorkeler as well as the serious diver/shooter.

The real technological advance is the profusion of highly functional, inexpensive underwater housings for virtually every major camera system made today. Naturally, you'd expect the head of one of the great photographic schools

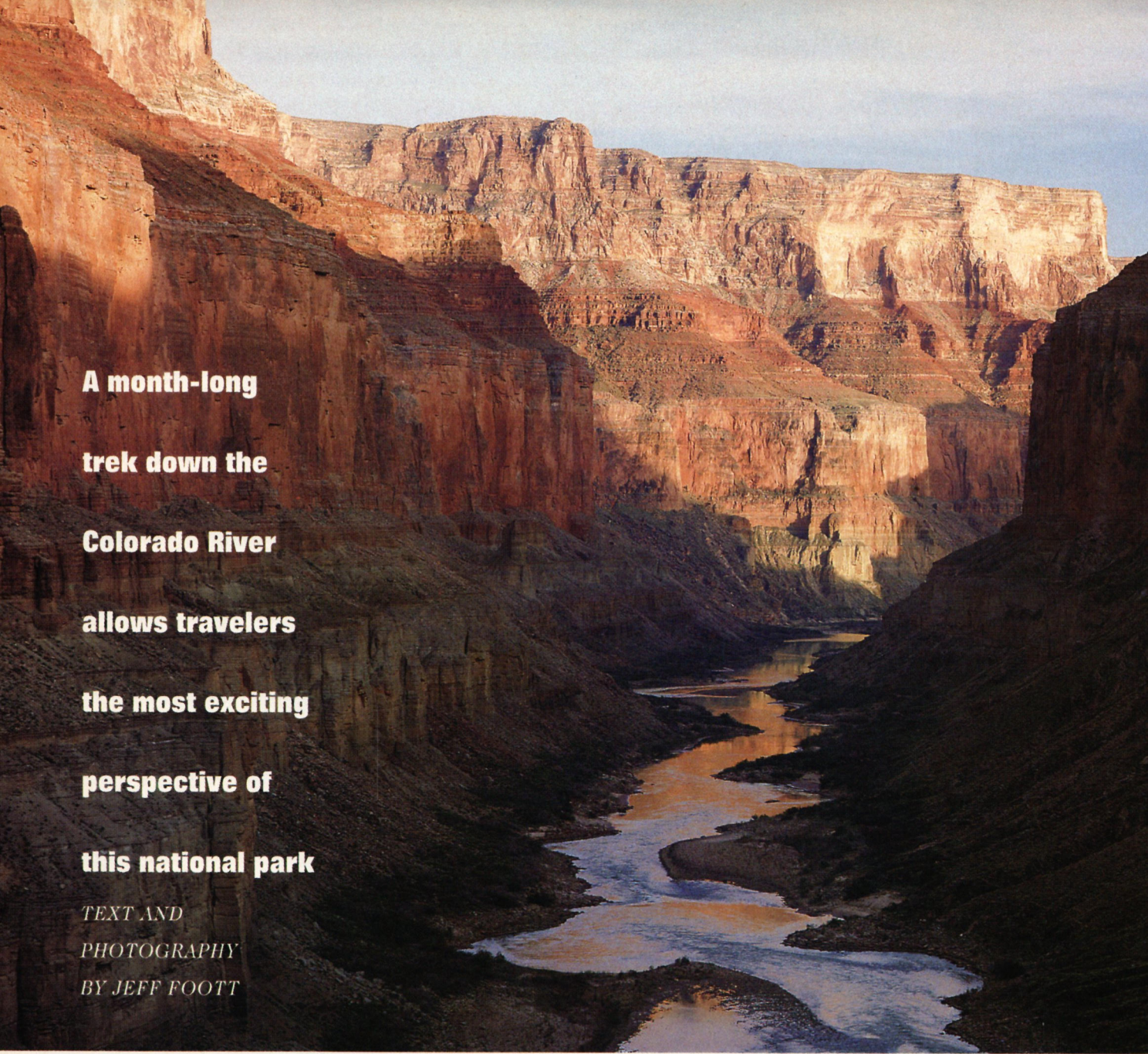
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TEXT AND
PHOTOGRAPHY
BY JEFF FOOTT

On a wintry night in Jackson Hole, Wyo., I received a phone call from Donna and Larry Ulrich. They were putting together a group of family members, friends and photographers to run the Colorado River in early spring. Watching the snow fall outside, I committed to the trip—it would be *warm* in Colorado in spring. The down-river run would be made in rowing dories and last about a month, allowing for lots of time to explore and photograph the many superb side canyons.

Thousands of people each year run the Colorado River, some on private permits, but most on commercial trips. The commercial trips, all permitted by the National Park Service, vary in the number of days on the river, size of the craft and number of people in the party. Rowing dories prove the most adventurous of the commercial trips; the larger, sometimes motorized rafts are less strenuous. Our trip was booked with Grand

Cruisin' The **Grand**

Canyon Dories, an outfitter that uses modernized versions of dories that have evolved from the original boats used by John Wesley Powell during his pioneering trips down the Colorado River. A list of river trip outfitters is available on request from Grand Canyon National Park, Arizona, (602) 638-7888.

The photographic potential on these trips is fantastic,



GRAND CANYON NATIONAL PARK, ARIZONA (left). *The inner gorge of the Colorado River from Nankoweap.*

Arca-Swiss 4x5 view camera, Schneider 180mm, Kodak Ektachrome 100, 1/4 sec. at f/32

GRAND CANYON NATIONAL PARK, ARIZONA (below). *A rowing dory camp on the inner gorge of the Colorado River.*

Arca-Swiss 4x5 view camera with 6x7 roll film back, Schneider 180mm, Fujichrome Velvia, 1 sec. at f/32



Canyon

as the scenic grandeur of the canyon is renowned. Action shots in the rapids and people pictures at riverside camps all test a photographer's abilities. The river environment also challenges a photographer's knowledge of keeping camera gear dry and sand-free. Most commercial trips provide the essential waterproof equipment you'll need to keep your personal gear dry. Some provide surplus

ammo cans as watertight cases for camera gear. If photography is the main reason for your trip, you should consider purchasing personal waterproof cases.

A constant vigilance is necessary to keep sand and water from ruining expensive camera gear. I used both a hard Tundra case and a soft, roll-up "river dry bag." When purchasing any hard case, it's best to remember that white reflects heat and black absorbs it. The canyon is hot, so the lighter the color of the case the better. Splashing a bit of white paint on the cover of a black case before the trip may be well worth it. The river bags roll up, providing protection for your equipment, and are easily accessible between rapids. Using a carabiner to clip the bags to the boat is helpful. I kept one fanny pack in a dry bag with me during the course of the day, always available, but protected

GRAND CANYON

from the rapids. For stops at side canyons, I packed my Arca-Swiss 4x5 view camera in a hard case where it was easily accessible. Most of your gear won't be available until the rafts are unloaded at night, so it's

important to communicate with the boatmen the need to get a particular case during stops at side canyons. The smaller the case, the easier it is for them to store it in a handy spot.

I kept my camera gear to a minimum; a 4x5 camera with three lenses. I used Fuji Ready Loads, both ISO 100 and Velvia, which I carefully kept in sealable, airtight plastic bags. My 35mm gear consisted of two Nikon 8008s, an 80-200mm zoom, a macro 60mm and a 20mm. A Bogen 3221 tripod completed my travel assortment. To shoot action shots of the boats going through the rapids, I added a Nikonos V and a 28mm "land lens." I also included an Ewa-Marine bag to protect a 20mm on a Nikon 8008. Both systems had drawbacks. The Nikonos required that the distance be estimated and set on the lens, and the 20mm in the Ewa bag had to be preset on *f*-stop and focus before the rapids. Of the two setups, the Nikonos was least worrisome as water and sand couldn't damage it, and most scenic shots made on the river were at infinity so the distance estimate wasn't really a problem.

I carried some fast film, ISO 100 and 200, for action shots and use in the darker side canyons, and shot an equal amount of Velvia for scenics and flowers. I kept enough film out for the day and placed the exposed and unneeded film in my sleeping bag. The rolled up bag kept it cool and protected.

Needless to say, all film and most of my lenses were stored in sealable plastic bags.

The rapids were the highlight of the day, and nearly every day we ran one or two major drops. The boatmen would stop and scout the best line through the rocks and wave obstacles; then one group at a time would photograph the other group making the run. Shooting the running of the rapids was exciting—just

(Cont'd on page 98)



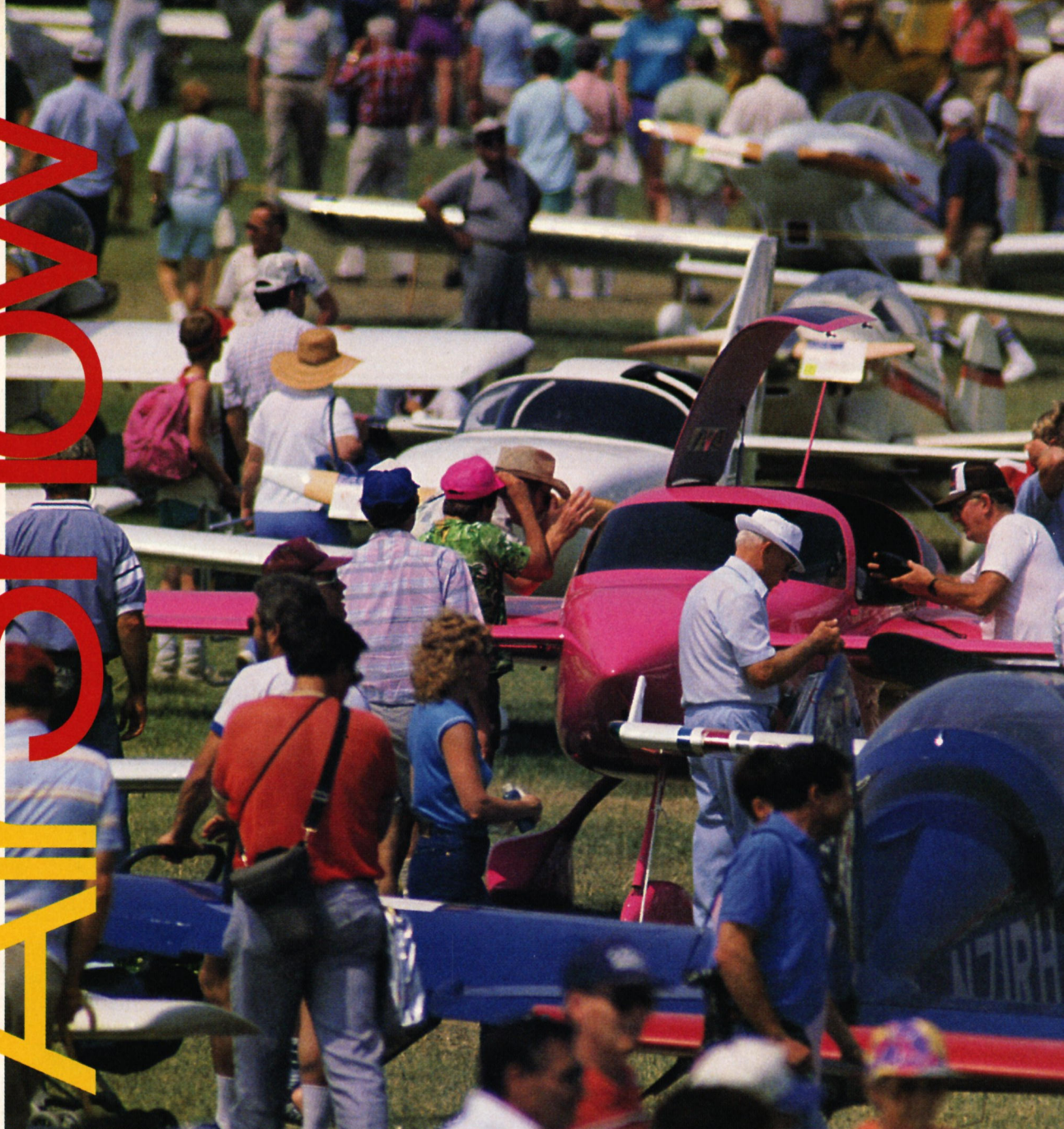
GRAND CANYON NATIONAL PARK, ARIZONA. Above: Havasu Creek confluence with Colorado River. Right: Waterfall at Elves Chasm.

ABOVE: Arca-Swiss 4x5 view camera, Schneider 120mm, Fujichrome Velvia, $\frac{1}{60}$ sec. at *f*/16

RIGHT: Arca-Swiss 4x5 view camera, Schneider 90mm, Fujichrome Velvia, 2 sec. at *f*/32



Air Show



Big or small, warbirds to antiques, chances are this spring or summer an aviation exhibition will be coming to your town. Follow these tips born from experience to maximize the action, color and spirit of the event.

TEXT AND PHOTOGRAPHY BY JAMES LAWRENCE

Spring is here and so is air-show season. I never go to an air show without taking my kid along. No, I'm not talking about my biological offspring. I mean that kid inside me who has always loved airplanes. When I walk onto an airfield and feel that smooth, light-gray concrete (or grass or black asphalt) under my feet, I'm eight years old again, fresh from a trip through the Looking Glass. So my personal rule number one for making good photography at air shows is to take your kid. Come to play. Find those scenes of airplanes, people and





THE BIG SQUEEZE: Get a little elevation above the scene, crank on a big telephoto of at least 300mm, and compress a lot into one frame (above, left). Shooting wide-open narrows further the already-tight depth of field, allowing optical focus on singular elements in the photo.

Canon EOS-1, Canon 600mm f/4, Fujichrome Velvia, $\frac{1}{500}$ sec. at f/4

SSSMOKIN'!: Use of telephoto is essential to pull in this usually-distant photo op (above). Hand-holding gives more freedom for proper composition.

Minolta 7xi, Minolta 300mm f/2.8, Fujichrome Velvia, $\frac{1}{500}$ sec. at f/5.6

MAGENTA PONY: World War II warbirds make great subjects for nostalgic shots (left), especially at the end of the day with a little filtration to enhance the mood. Wide-angle lenses offer many looks.

Canon A2E, Canon EOS 20-35mm at 20mm, Fujichrome Velvia, $\frac{1}{500}$ sec. at f/2.8



FORBIDDEN ANGLE:
Shooting into the sun can give unusual effects (left). At small apertures, the sun will go to a star, and the addition of a starburst will add interest to the sky overhead, suggesting a sense of the "wild blue yonder" in the photograph of a statically displayed jet. A custom printer can still pull out detail from the shadowed foreground.

Minolta 7000i, Minolta 20mm f/3.5, Kodachrome 64, $\frac{1}{500}$ sec. at f/16

PASS IN REVIEW:
Panning at a fast shutter speed gives sharp airplane and ground detail (below, left). You don't always need an oversized telephoto to take in the action of an air-show stunt. Here, a modest 300mm zoom makes it possible to include both the wing-walker and his crowd of onlookers. Or try a slow shutter speed, which will blur the crowd but, with a little practice, still give a sharp airplane.

Canon EOS-1, Canon 300mm f/2.8, Fujichrome Velvia, $\frac{1}{500}$ sec. at f/4



TELEPHOTOS AND WIDE-ANGLES can help eliminate clutter around a subject, as well as play up the subject's most interesting features. Zooms allow you to adjust focal length down to the millimeter to crop precisely, despite restrictions on where you're allowed to stand. At top, a telephoto zoom compresses the subject and throws background clutter out of focus. The middle and bottom photos show how a wide-angle lens exaggerates the foreground while providing an artificial perspective that dramatically diminishes the relative size of objects in the background.

Pentax PZ-1, SMC Pentax-FA 28-80mm f/3.5-4.7 and SMC Pentax-FA 100-300mm f/4.5-5.6, Kodachrome 64



locations that make you feel good—and let the camera have them.

Gear-Up Time

A good basic kit for shooting air shows is truly one camera and one lens. Make that lens a quality zoom with a fairly broad range from medium-wide to medium-telephoto and you've got a lightweight, efficient start.

My kit for a show like the Reno Air Races or the Oshkosh Fly-In Convention in Wisconsin, where it's not uncommon to walk 10 or 15 miles or more in a day, is probably more burdensome than yours will be. I feel naked without my Canon 28-105mm *f*/3.5-4.5, 80-200mm *f*/2.8 and 20-35mm *f*/2.8 zooms. My camera bag is stuffed with extra batteries and filters—polarizer, colored gels, Tiffen enhancing filter, warming filters (81A and 1B). I then balance it out with one of my camera bodies and a 300mm lens.

Since we're getting into Sherpa territory now, consider buying or renting a 300mm lens with a 1.4X and 2X doubler. That will give you effectively three lenses of 300mm, 420mm and 600mm range. The doubled 600mm version (300mm x 2) is slower (*f*/5.6),

but dramatically lighter than the *f*/4 single-focal-length 600mm.

Canon, Nikon, Minolta, Pentax and after-market lensmakers such as Tamron, Tokina, Sigma, et al., offer a broad selection of monster-range zooms like Canon's 35-350mm (a 10:1 zoom ratio!) and 28-200mm (about 7:1). Use one of these and you can fire the Sherpa, cut the kids loose and get a lot of great shots with just one lens.

Up In The Sky

Let's get our heads into the particular challenges of air-show shooting. Midday light is a major challenge at most air shows. Whenever possible, I shoot static aircraft as early in the morning and late in the day as I can and save the midday, flat, hazy, blue-washed summer light for aerobatics and air-show fly-bys, only because that's when they're usually scheduled.

You'll want to photograph aerial flight activities with: 1) the biggest (preferably zoom) and fastest lens you've got and; 2) a polarizing filter to deepen the sky, accentuate contrast for your subject and intensify colors. Polarizers do a lot to forgive the spectral sins of midday light. They cost

you a stop or two of light so you're increasing the risk of motion blurs. Like many things, you get one benefit by trading away another.

Shooting up into the sky from noon until mid-afternoon presents challenges to camera meters. If it's a hazy or milky sky, even today's sophisticated multi-segment meters can be fooled into stopping down too much.

Relax. Program metering with today's multi-segment meters is often going to do the job for you. One of my personal favorites is a 600mm, hand-held photograph of a skydiver coming down under canopy with a huge American flag tied to his ankle. I trusted the camera's meter and got a series of winners.

Aesthetically Speaking...

How to deal with an environment loaded with people, noise, people, distractions, people, physical discomfort and people? Clearly, the biggest drawback to getting a clean shot of an airplane on the ground is all the other air-show freaks just like you who want to invade your picture space.

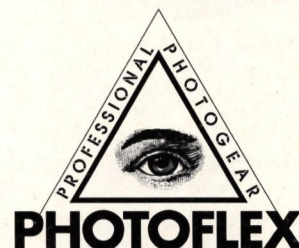
You'll be a lot happier if you live

(Cont'd on page 72)

Could you use an assistant? Try the **future** in camera bags!

"If I only had an assistant." Sound familiar? Well, if you're like thousands of other photographers, you do it all yourself and continue to lug around a camera bag that merely totes your gear. It's time to stop beating yourself up with a camera bag that hurts your shoulder, wrecks your back, blocks your view, takes two hands to operate, sags in the middle, has to be set down every time you need something, and plain out slows you down!

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Favorite FILTERS For COLOR

With this simple kit, you can intensify colors and improve contrast to give your landscapes more snap and punch

TEXT AND PHOTOGRAPHY
BY DEBORAH DAVIS

Photographers seem to love using filters, lots and lots of filters, and we should. Few accessories are as fun, as easy to use or as necessary to good results as those little disks of glass. And, while it isn't always possible to indulge our "lens lust" when longing for a piece of new equipment, the price of a filter can usually be squeezed out of the budget. At times, experimenting with a new filter has got me out of feeling stuck and back to feeling open and playful. And, at times, when the creative juices are already flowing, a filter has been the tool that makes the image I've previsualized possible.

The filter display at my local cam-

era store reminds me of the spice shelves at the supermarket. There's something for everyone—standard filters for routine uses, exotic filters for special effects and a myriad of selections in between. What you choose is largely a matter of personal taste. Here, we present to you the basic kit of filters that we find most valuable when traveling the great outdoors.

Before purchasing any filter, however, there are a couple things to know. First, be sure to purchase the largest-size filter needed for the lenses you own or plan to own. While it's easy to adapt a bigger thread-size filter to lenses needing smaller filters, doing the opposite often results in vignetting, darkening the corners of your pictures where the too-small filter intrudes into the image area. Stepping rings are available to make various size combinations work together, and this efficiency will save you both money and

room in your camera bag. Second, filters used to alter color in an image are best used with color slide film. Color negatives are printed by machines that usually undo the effect of the filter. Unless you're working with a custom lab and can communicate with your printer, your filter will be "corrected" away.



This Mono Lake, California, sunset was too contrasty to hold detail and color in both sky and water. To record the scene the way it looked to the eye required a split-neutral-density filter. The photo above is unfiltered and exposed for the sky. By placing the dark portion of the filter over the sky in the top photo, the two tonal areas were brought into balance. Color also was improved by adding a blue filter and, composition was adjusted to include more foreground rocks.

Nikon F4S, Nikkor 24-50mm zoom, Hoya 2-stop split-neutral-density filter, Bogen tripod, Fujichrome Velvia, 1/8 sec. at f/16

The warm colors of autumn are richer and more vibrant when seen through a Tiffen enhancing filter (far right).

The red spectrum of the colors is intensely saturated while little effect is shown elsewhere.

The photo at right shows the same shot without the use of the enhancing glass.

Nikon F4S, Nikkor 20mm
f/2.8, Bogen tripod, Kodak
Lumiere 100X, 1/4 sec. at f/22



Don't Leave Home Without...

The Graduated Neutral-Density Filter. For the landscape photographer, no other filter can save the day like a graduated neutral-density filter. This filter shifts across its surface from clear to some degree of neutral density (darkness) and offers exposure control in situations where a scene contains a much brighter area that must be balanced with a darker one.

sity is supplied in various degrees, from one to three stops worth. You can choose from a soft, gradual change or an abrupt change in density, from round filters that screw into the lens or rectangular sheets of glass that slide into a special holder, from filters that are color neutral to those whose densities are tinted blue or orange or pink or mauve for special effects. While many serious shooters own several types, a good one

The Polarizing Filter. This filter is used to darken skies by cutting back on the amount of light reflected from dust and moisture particles in the atmosphere. It also removes unwanted reflections from water, leaves, rock, glass or any nonmetallic reflective surface. By eliminating glare and reducing hot spots, a scene's contrast range is compressed to better hold color and detail.

The polarizing filter consists of two



SEAN WILKINS



Under the veil of an overcast sky, the aging stones of Rhyolite ghost town appear monochromatic in lifeless "clay" gray tones (far left). At least there are no harsh shadows, and a balanced exposure between the background sky and the foreground was easy under these conditions. Adding a Hoya 81B warming filter gave the masonry and rock a more pleasing "sandy" hue (left).

Minolta Maxxum 700si, Tokina 28-200mm f/3.5-5.6, Kodak Lumiere 100

Typically, this is a backlit landscape, where the sky meters several stops brighter than the foreground. Without the filter, you can record a normal-looking sky with a black, silhouetted foreground or a properly exposed foreground with a white, blown-out sky. You can't capture detail and color in both. The graduated neutral-density filter works by selectively darkening only the sky to bring it into tonal balance with the land.

Several types of split-neutral-density filters exist. The amount of den-

to start with is a two-stop gradual neutral-density rectangular filter.

The rectangle gives you more control in composing your image by allowing you to slide the filter up or down in its holder or twist it at an angle. This means you can place the horizon at its most effective position instead of just in the center of the frame. Use your depth-of-field preview button to assist you in adjusting the filter so that the area of density lines up properly with the horizon. Meter the foreground and manually set your exposure before attaching the filter.

disks of glass in separate rings. These rings rotate independent of one another and form a screen that blocks varying degrees of reflection. The amount of polarization is adjustable to your taste; just look through your lens and turn the top ring until you see what you like. You'll get maximum effect when shooting with the sun to your side and little or no effect when the sun is directly in front of or behind you. The polarizer reduces the light reaching your film by one to two stops, much like sunglasses. Your in-camera meter

A Hoya PL-CIR polarizer can be used to darken the blue of the sky to make the white clouds stand out with more contrast and texture.

Minolta Maxxum 700si,
Tokina 28-200mm f/3.5-5.6, Kodak Lumiere 100



SEAN WILKINS



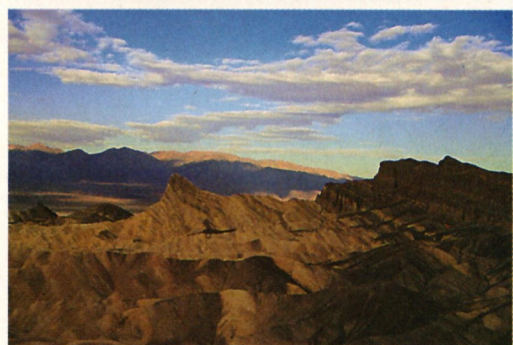
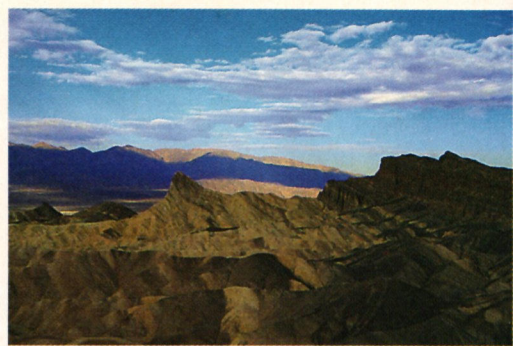
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FAVORITE FILTERS

will compensate for this light loss (as it does for all the following filters) so meter normally; if you see no effect when rotating the ring, it's usually best to try composing from a different angle or to remove the filter. All autofocus cameras require a "circular" polarizer for proper metering and focusing operation, while older manual-focus systems use a "linear" polarizer.

The Enhancing Filter. This unique piece of glass wonderfully brightens the red spectrum of light, popping that color to exaggerated proportions and adding a subtle warmth to the scene while leaving other colors relatively unaffected. This filter is perfect for spicing up situations and subjects where warm color prevails. Fall foliage and red rock are two of my favorites. The enhancer also prolongs your shooting time as sunset light begins to fade, giving you precious extra minutes in which to work.

The Warming Filter. The warming filter does exactly what the name implies, it warms the colors in a scene. This is often necessary or desirable because the actual color of light doesn't match your film's color balance. For instance, in shadows and open shade, light is excessively blue and "cold" and may produce an undesirable look and feel on film. A slight warming filter neutralizes this blueness, producing a more positive visual and emotional impact by making the colors more accurate or the scene warmer and more inviting, depending on the degree of warming used. Other common uses include subtly enriching skin tones or punching up a pale sunrise or sunset sky. Warming filters are usually des-



SEAN WILKINS

igned by the number 81, followed by a letter, "A" through "F", denoting a lighter to heavier effect.

Another set of extra-strength warming filters, labeled the 85 series, is also very useful. These are effective for producing a more saturated sunset sky, simulating the look of firelight in a scene

or converting slide film made for use under indoor tungsten lighting to daylight balance. We suggest the 81A and 85 for your travel kit.

The Cooling Filter.

When an image will benefit from the look and feel of blue light, a slight blue filter is called for then. Blue filters really carry the mood when photographing in foggy conditions. They're similarly effective when shooting water scenes or waterfalls and their surrounding mists. They add a touch of color to dismal gray light without being obvious and an extra degree of "cold-

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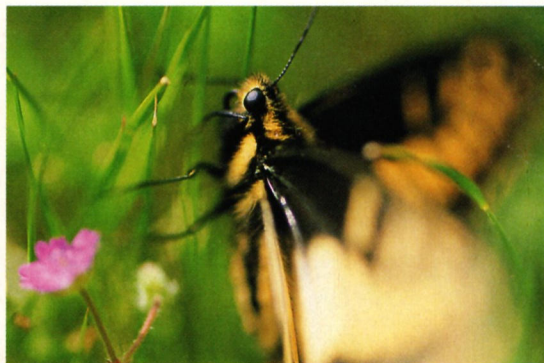
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A skittish butterfly makes an excellent subject for a telephoto lens and a Nikon or Hoya close-up filter. This combination produces a tight composition without having to get close to the insect. The closer working distance of a macro lens would have been riskier.

Nikon 8008s, Nikkor 75-300mm zoom, Nikon 6T diopter, Fujichrome Velvia, 1/500 sec. at f/5.6

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While filters can be used to improve outstanding scenes, making the great greater, they can be useful in making the mediocre better than average. Here, Hoya 81B warming filters were used to shift the colors of the scenery at Zabriski Point, Death Valley. The warming filter didn't affect the blue of the sky very much, but it added a little richness to the clouds and earth tones. The FL-DAY went a step farther, but in the direction of a magenta cast. There's no right or wrong here, just a matter of personal taste.

Minolta Maxxum 700si, Tokina 28-200mm f/3.5-5.6, Kodak Lumiere 100

ness" to predawn or post-sunset situations. If end-of-day light seems excessively warm for your purposes, the blue filter helps restore neutrality. Slight blue filters are designated by the number 82 and also followed by a letter, "A" through "F."

The FLD Filter. This is a dual-purpose filter, most commonly used as a color-compensating filter for photographing in fluorescent lighting. Since fluorescence produces a sickly green cast on daylight film, green's opposite color, magenta, helps reduce this effect. Though outdoor photographers won't encounter this problem often, it does occur when shooting city skylines. Another use makes carrying an FLD filter worthwhile, however. Its magenta color offers a different solution to sunrise and sunset shooting. When adding a warm orange cast feels ordinary or clichéd, the FLD option may be the better choice for a zingier sky.

The Close-Up Diopter. Another useful travel companion is the magnifying filter. It can take the place of a bulkier macro lens and give you access to photographing nature's details. The amount of magnification you get depends on both the power of the close-up diopter and the focal length of the lens on which you use it. The diopter strengths are often measured by a +1, +2 or +4 designation with the higher number being the stronger filter. The longer the focal-length lens you use, the higher the magnification you achieve. The ideal combination of a set of these filters and a telephoto zoom lens lets you produce a variety of shooting ranges, often from quarter-life-size to full life-size images. If you buy a set of filters and use them in combination, always place the strongest one closest to the lens. Also consider the higher-quality close-up diopters made of two elements. They're sold singly and cost more, but yield a sharp, first-rate image comparing favorably to the images you'd create with a macro lens. For size, weight, price and versatility, close-up lenses are hard to beat. **OR**

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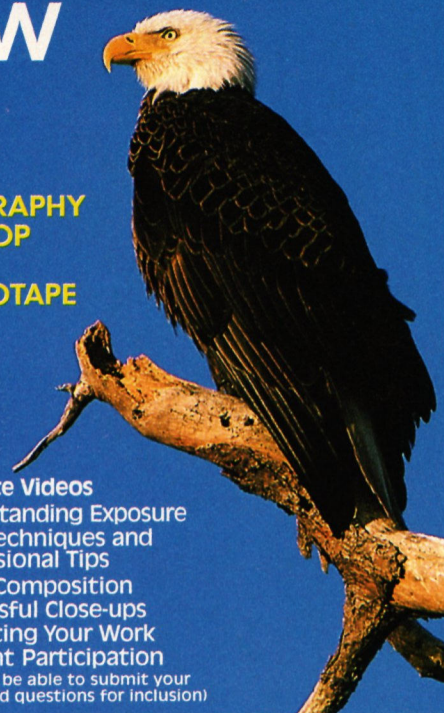
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SPRING

Early every year, the photo and outdoor industries put on their most important trade shows to introduce their latest and greatest new products. Here are some of the highlights.

BY GEOFFREY B. ENGEL

ROUNDUP

The outdoor and photographic industries hold their annual conventions to showcase the latest introductions from each manufacturer. The *OUTDOOR PHOTOGRAPHER* staff finds itself there every year experiencing similar emotions—like kids locked inside a candy store. This year was no exception. There were some brand-new companies with truly innovative products that have already wound up in our camera bags, along with exciting updates and additions from some of the same old suspects we've come to know and love. We also know how difficult it can be to think of gifts for those hard-to-shop-for friends and relatives, so we've specifically chosen items for this article that

will make fantastic Father's Day or Graduation Day presents for all enthusiastic outdoor photographers.



GARMIN



AGFA Agfa introduces several new products, including its line of HDC color-negative films. Available in ISOs of 100, 200 and 400, the High-Definition Color products offer improved reliability and quality in addition to excellent definition and color separation and saturation. Also introduced: CTx color-transparency films and Scala black-and-white-transparency film. Contact: Agfa, 100 Challenger Rd., Ridgefield Park, NJ 07660, (201) 440-2500.

CANON The big news from Canon is the EOS-1N RS, the world's fastest (10 fps) AF SLR with the shortest release time. The new camera uses a pellicle mirror that allows for exposure through the mirror while the viewfinder image never disappears—at the cost of only a 1/3-stop of light. Other introductions: the 70-200mm f/2.8 AF lens, EOS•DCS 3 and 75-300mm f/5.6 IS (Image Stabilizer). Contact: Canon, One Canon Plaza, Lake Success, NY 11042, (516) 488-6700.

BAUSCH & LOMB Bausch & Lomb's Night Ranger 150 and 250 night vision viewers utilize technology from ITT, the world leader in night vision. The Night Rangers are designed specifically for sports enthusiasts, hikers and photographers. These lightweight, water-resistant units offer state-of-the-art Generation II image-intensifier systems for exceptional performance and clarity in very low light. Contact: Bausch & Lomb Sports Optics, 9200 Cody, Overland Park, KS 66214, (913) 752-3400.

GARMIN Garmin's GPS 40 Personal Navigator is designed with the outdoor enthusiast in mind. It relies on signals emanating from 24 global positioning satellites orbiting 12,000 miles above the Earth to triangulate your position anywhere on the face of the planet, providing latitude, longitude, altitude and speed. Contact: Garmin, 9875 Widmer Rd., Lenexa, KS 66215, (913) 599-1515.

TOKINA The latest from Tokina is the AT-X 304 AF 300mm f/4 professional apochromatic lens. The 304 weighs 40.5 ounces, has a minimum focus distance of 6.6 feet and is available in Canon, Minolta or Nikon D mounts. Contact: THK Photo Products, 1512 Kona Dr., Compton, CA 90220, (310) 537-9380.

VASQUE Vasque's Kenai is a midweight, technical hiking boot patterned after taller field boots. With its 10-inch overall height, it's designed for use in any hiking environment where a greater lever of ankle support and protection is needed. The Kenai features a tall, waterproof Gore-Tex "Stormsock" bootie. Contact: Vasque, 314 Main St., Red Wing, MN 55066, (800) 224-HIKE.

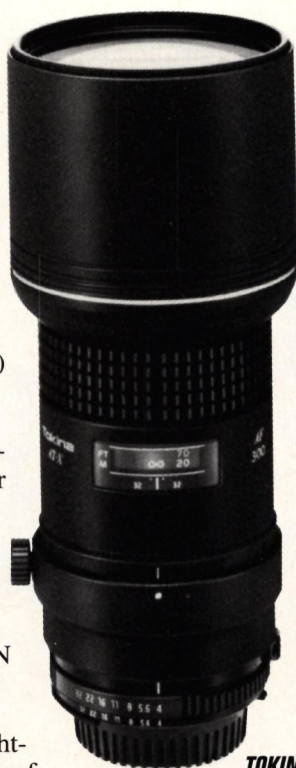
COLUMBIA New from Columbia is the lightweight Hunstein Parka, a waterproof, breathable, stuffable jacket that accepts any of the com-



AGFA



BAUSCH & LOMB



TOKINA



COLUMBIA

SPRING '95 ROUNDUP

pany's zip-in fleece Interchange liners for greater warmth. Matching pants are available separately. Contact: Columbia Sportswear, 6600 N. Baltimore, Portland, OR 97203, (800) 547-8066.

SPORTSTECH SportsTech introduces the BackThing and the KneeThing, two items designed to provide support to help get you out in the field when your body has other ideas. By providing proper support without restricting movement, you can maintain activity without pain. Designed to be worn before or after injuries occur, either product will aid in the healing process. Contact: SportsTech, 2561 South 1560 West, Woods Cross, UT 84087, (800) 279-7123.

SUNDOG SunDog's Traveler Camera Pack is designed to meet the needs and requirements of moderate day hiking. It's big enough to carry one SLR along with two or three additional lenses, flash and accessories. In addition, the compartment is removable to further streamline the pack. Other introductions: the Can-

SPORTSTECH

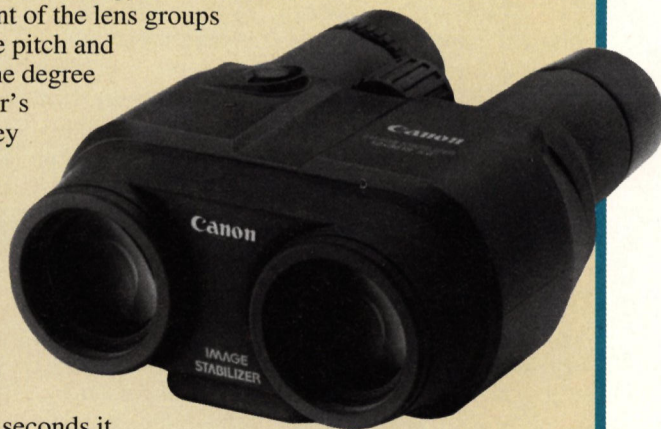


What's Hot:

Image-Stabilizing Technology

The most interesting, revolutionary product shown for the outdoor photographer at the Photo Marketing Association show was the new image-stabilization binoculars and zoom lens, both from Canon. These products are truly amazing. The 12x36 binoculars are available now; the 75-300mm zoom should be on store shelves in late 1995. It will be worth the wait.

The technologies are different in the two products, but the visual effects are the same. Accelerometers (a gyro-like sensor) located toward the front of the lens groups instantly determine the pitch and yaw associated with the degree of shaking that the user's hands are causing. They then translate the movements and force complementary motions on another lens group that appears to void all motion. This entire effect takes less than a half-second to begin, rather than the several seconds it took previous incarnations from other manufacturers that had to wait for the gyros to come up to speed.



In the case of the binoculars, two glass elements that are connected with a bellows (filled with a silicon-based oil) tilt in and out to cancel the perceived motion. The zoom lens uses a different technology that actually jogs the second element up and down, left and right, while maintaining its vertical axis. The binoculars operate off two AA-cell batteries for approximately three hours of continuous use (eight hours with lithium AAs). The 75-300mm zoom doesn't require external power, but rather runs off the camera's power, yet only reduces battery life by one-third.

We field-tested a set of the binoculars and were completely awe-struck with the stability and amazing clarity of this 12x-power set. We're told the 75-300mm f/4-5.6 zoom will be a fantastic addition to any outdoor photographer's camera bag because it allows the user to shoot with shutter speeds as low as $\frac{1}{30}$ sec. at 300mm—hand-held! Quite a gain in usable range, you might say. We'll keep you posted as the lens becomes available for testing.

SUNDOG



yoneer Fanny Pack series and backpack raincovers. Contact: SunDog, 6700 S. Glacier St., Seattle, WA 98188, (800) 634-0005.

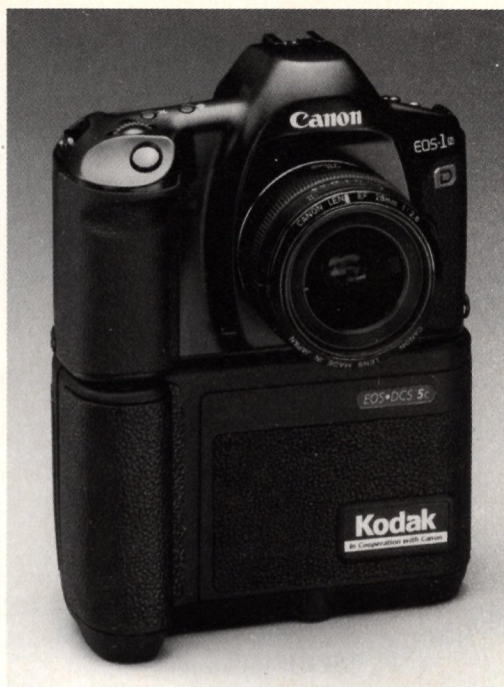
KODAK Kodak introduces its EOS•DCS 5, a high-performance, megapixel digital camera based on Canon's EOS-1N camera. Developed in cooperation with Canon, the camera features a burst rate of 2.3 images per second for 10 images and ISOs to 400 for color and to 800 for black-and-white. Also introduced: Ektachrome electronic output film, Polymax fine-art paper and Royal Gold 200. Contact: Kodak, 343 State St., Rochester, NY 14650, (716) 724-6970.

MINOLTA This year marks the 10-year anniversary of the Maxxum AF camera and, in a curious twist of design, Minolta "takes a step backward" to make a modern camera—the 600si—that's easier to use, replacing buttons and readouts with comfortable, user-friendly dials. With the 5400 flash, it (and other Maxxums) can perform remote TTL exposures. Also introduced: the Maxxum 300si, Maxxum 300mm f/4 AF, Flash Meter V, AF Soft Focus 100mm f/2.8 and AF Zoom 75-300mm f/4.5-5.6. Contact: Minolta Corp., 101 Williams Dr., Ramsey, NJ 07446, (201) 825-4000.

DOMKE Domke has a new line of rugged outdoor camera packs designed for outdoor and travel photographers. The OutPack is designed to be used upright. It also features a removable internal aluminum frame and a six-point adjustable harness with padded upper and lower sections, padded belt and strap. Contact: The Saunders Group, 21 Jet View Dr., Rochester, NY 14624, (716) 328-7800.

AQUALENS This wide-angle lens housing (not pictured) allows owners of Nikonos II, III, IV and V cameras to use a wide variety of standard above-water SLR lenses with Nikon AI, Canon FD, Minolta MD, Pentax KA or Olympus OM mounts. It's a way to expand your underwater wide-angle repertoire without spending a lot of money on specialized underwater lenses. Contact: Bogen Photo, 565 E. Crescent Ave., Ramsey, NJ 07446, (201) 818-9177.

EUREKA! Eureka! introduces its new Pinnacle backpacking tent, a self-supporting, three-pole rectangular dome tent ideal for three-season use in varying climates. The tent has a unique hi/low ventilation system that maintains comfortable climate control. Contact: Johnson Worldwide Associates, 1326 Willow Dr., Sturtevant, WI 53177, (414) 631-4945.



KODAK



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SPRING '95 ROUNDUP



PENTAX

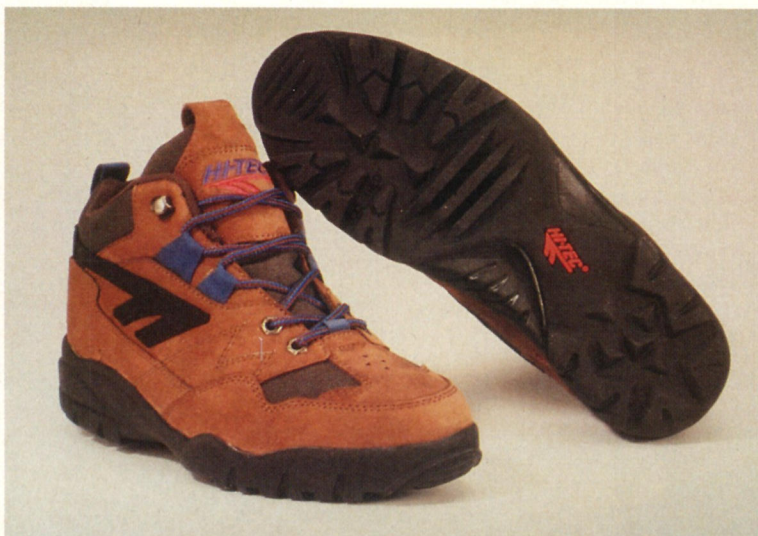


TAMRAC

PENTAX Designed for the serious amateur or professional, the PZ-1P has several well-thought-out features. Autobracketing is built in for three frames, $\pm \frac{1}{2}$ -stop. If left in autobracket mode, the camera will take a single "best" exposure frame when the shutter button is pressed for a single shot or, if the shutter is held down, it will take three bracketed shots, allowing the shooter to bracket or not bracket at will. This may be the best solution to built-in bracketing we've seen. Contact: Pentax, 35 Inverness Dr. E., Englewood, CO 80112, (303) 799-8000.

TAMRAC Tamrac introduces the Rolling Strong-Box, a camera-carrying system on wheels. The system is designed to hold either 35mm or medium-format systems with a strong protective framework made of rigid plastic and foam that can hold at least 10 times its weight. Also introduced: the Photographer's Daypack and World Correspondent Series. Contact: Tamrac, 9240 Jordan Ave., Chatsworth, CA 91311, (818) 407-9500.

HI-TEC In conjunction with its sponsorship of the Eco-Challenge, Hi-Tec introduces a complete line of Eco-Challenge footwear. The Saguaro Challenge (pictured) and Sierra Challenge are designed for trail running, mountain biking, hiking and other outdoor activities. Contact: Hi-Tec Sports, 4801 Stoddard Rd., Modesto, CA 95356, (209) 545-1111.



HI-TEC

FUJI Fuji's Super G Plus color-negative film is available in ISO settings of 100, 200, 400 and 800. The company's new RT (Real-Tone) technology results in better portraits and all types of "people pictures." Also introduced: the QuickLoad film holder, GX680II camera and Discover 312 zoom compact camera. Contact: Fuji Photo Film USA, 555 Taxter Rd., Elmsford, NY 10523, (800) 659-3854, ext. 2571 (Eastern U.S.) or (800) 326-0800, ext. 4223 (Western U.S.).

FUJI



DOSKOCIL The Designer series of hard cases (not pictured) are built from high-impact plastic with multiple layers of cubed foam that enables users to customize the interior to meet their needs. Available with O-rings to make them completely waterproof, the cases are

backed by a five-year limited warranty. Contact: Daskocil, P.O. Box 1246, Arlington, TX 76004, (817) 467-5116.

TAMRON The Digital Fotovix IIIS-D from Tamron bridges the gap between photography, videography and computer technology. The Fotovix can be directly connected through a SCSI interface to either a Macintosh or PC with Windows to create desktop graphics from color or black-and-white transparencies and negatives. Contact: Tamron, 99 Seaview Blvd., Port Washington, NY 11050, (516) 484-8880.

RICOH Ricoh offers the world's slimmest full-featured 35mm compact camera—the R1. The body of the camera is as thin as the diameter of a roll of film, but it still offers sophisticated features designed to satisfy even the advanced amateur photographer. Also introduced: the Shotmaster 130Z, Shotmaster 110-ZP and XR-X 3PF. Contact: Ricoh, 180 Passaic Ave., Fairfield, NJ 07004, (201) 882-2000.

MANZELLA New from Manzella is its Glacier Wind-Stopper line of gloves and mittens. They provide an extremely breathable, yet completely wind-resistant glove to keep your hands warm and flexible in all dry, cold-weather conditions. They're the product to have when you need to cut through the wind-chill factor. Contact: Manzella, 5684 Main St., Buffalo, NY 14231, (716) 632-8857.

MERRELL Merrell's Acadia GTX is an all-weather hiking boot with full Gore-Tex bootie that makes it completely waterproof. It features a waxed leather upper and the unique Merrell CrossCut sole for agility and traction. This well-designed boot provides an extraordinary base for many types of hiking, from day trips to two-week backcountry expeditions. Contact: Merrell, P.O. Box 4249, Burlington, VT 05406, (801) 864-4519.

KIRK ENTERPRISES The TH-5 Backpacker ballhead (not pictured) features Kirk's quick-release platform, which is added to other manufacturers' ballheads. All work is matched perfectly in terms of design and construction. Contact: Kirk Enterprises, 4370 E. U.S. Hwy. 20, Angola, IN 46703, (800) 626-5074.

DIAMOND LIGHT The first significant technological advancement for portable lighting in decades, Diamond Light manufactures two flat flashlights (not pictured). Each utilizes a unique Hi-Gain Optics lens that incorporates a pattern of diamond-like facets to create a beam that projects more light farther than



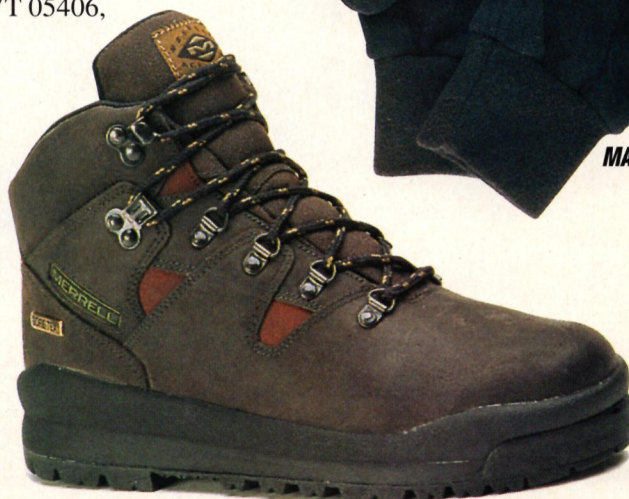
TAMRON



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MERRELL

SPRING '95 ROUNDUP

others. Contact: Diamond Light Industries, 3191-A Airport Loop Dr., Costa Mesa, CA 92626, (800) 804-4448.

NIKE The Air Tarn is Nike's fully waterproof boot that makes the company's All Conditions Gear line truly ready for anything that the outdoor enthusiast can dish out. The boot has a Prime leather Weather Tuff waterproof upper and Gore-Tex drop sock. It also features the unique Nike Air sole unit, which allows the user to step in without any break-in period. Contact: Nike, One Bowerman Dr., Beaverton, OR 97005, (503) 671-6453.

WOOLRICH Woolrich celebrates 165 years of manufacturing quality outerwear in 1995 with a full line of retro-look tartan plaids that hark back to the company's earliest days. Among those is the North Bend Pullover one of the company's latest lines of pile products. It comes in three different color variations. Contact: Woolrich, Woolrich, PA 17779, (800) 995-1299.

OLYMPUS The new and exciting compact camera from Olympus is the LT-1, built upon the chassis of the very successful Stylus. The LT-1 is a stylistic interpretation that will fit anywhere and comes with a built-in wrap-around cover that makes it completely case-free, plus all the features we've come to expect from full-featured compacts. Also introduced: the Super-Zoom 3500, SuperZoom 2800, Infinity Hi-Lite, OM-3Ti and Zuiko 35-80mm f/2.8. Contact: Olympus America, 145 Crossways Park, Woodbury, NY 11797, (516) 364-3000.

NIKON Nikon offers three new D-type lenses to the AF Nikkor lens system—the 35-105mm f/3.5-4.5, 180mm f/2.8 and 35mm f/2. These lenses replace Nikkor lenses not previously available in D-type. All incorporate the exclusive Distance (D) signal, which sends informa-

NIKE



WOOLRICH

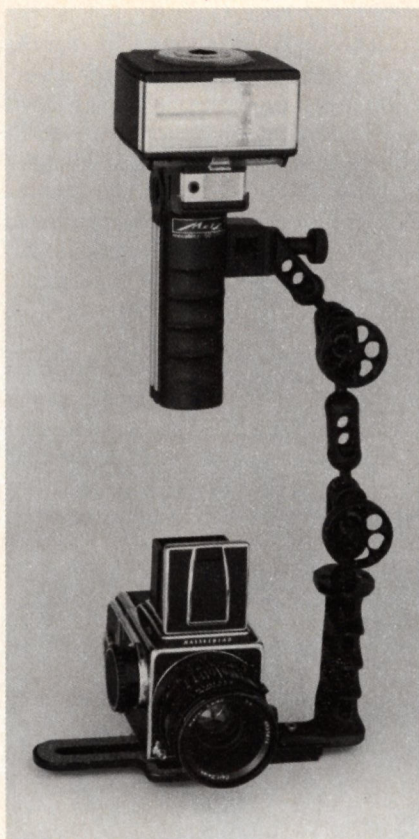
OLYMPUS



PEAK 1



NIKON



STRONG ARM

tion to the body's CPU where it's integrated into the system's exposure control operation. The D-signal functions exclusively with the N90s, N90, N70 and N50. Other introductions: the Lite-Touch Zoom 105, Lite-Touch Zoom 70, One-Touch Zoom and Nice-Touch 3. Contact: Nikon, 1300 Walt Whitman Rd., Melville, NY 11747, (516) 547-4200.

PEAK 1 The next generation of back-packs from Peak 1 uses an innovative flame-laminated molded EVA foam suspension system and Quick Slide packsack attachment designs. It weighs only two pounds, yet delivers superior vertical rigidity for strength while providing torsional flexibility so it turns and moves with the body. Contact: Peak 1, P.O. Box 2931, Wichita, KS 67201, (316) 261-3276.

STRONG ARM The Strong Arm line consists of seven unique camera bracket systems and a wide choice of accessories. It uses aircraft-grade aluminum, featuring a variable friction design to lock in the positioning of strobes and leaving enough tension to reposition or go vertical. Contact: Bogen Photo, 565 E. Crescent Ave., Ramsey, NJ 07446, (201) 818-9500.

SIGMA The SA-500 SLR is Sigma's latest camera to use with its fine line of lenses. It has a cross-type auto-focus sensor that's quick and accurate in a wide range of lighting conditions and AF situations. Also introduced: the Mini Zoom 105 Macro, 70-210mm *f*/4-5.6 UC-2, 70-300mm *f*/4-5.6 DL, 400mm *f*/5.6, 300mm *f*/4 and a new series of binoculars. Contact: Sigma Corp., 15 Fleetwood Ct., Ronkonkoma, NY 11779, (516) 585-1144.



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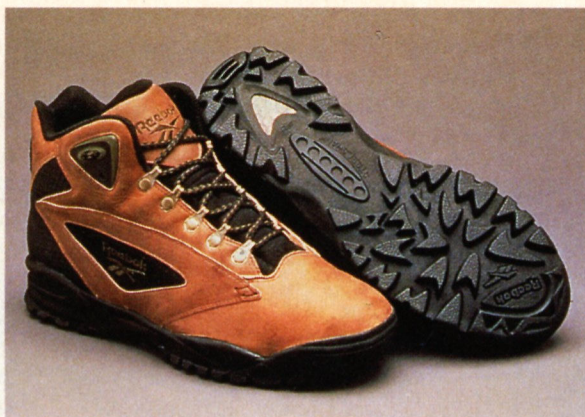


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REEBOK



REEBOK New from Reebok is the Telos, a shoe aimed at the outdoor enthusiast looking for a performance, lightweight hiking boot utilizing the latest environmental technology. It features a combination upper of full-grain leather, 650 denier Nature-Tex fabric and Benecke synthetic leather. Contact: Reebok International, 100 Technology Center Dr., Stoughton, MA 02072, (617) 341-5000.

ROYAL ROBBINS Royal Robbins introduces its Fill It Up vest, a fully lined product designed to allow photographers to free up their hands by putting lenses, film and cameras inside the vest's generous pockets.



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It also features a deep inside chest pocket to store smaller valuables. Contact: Royal Robbins, 1314 Coldwell Ave., Modesto, CA 95250, (209) 529-3170.

OP/TECH OP/Tech introduces its new binocular wrap (not pictured), a soft neoprene cover that surrounds the entire set of binoculars, allowing the viewer to use the original carrying strap from the set. The soft case has only one relatively small opening, so it's weather-, dirt- and sand-resistant. Contact: OP/Tech USA, 290 Arden Dr., Belgrade, MT 59714, (800) 251-7815.

LOWEPRO Smaller than LowePro's other Trekker backpacks, the Mini Trekker (not pictured) is designed for photographers who want to travel light with a 35mm SLR system. The Mini Trekker slides right under airline seats so you don't have to worry about whether your gear will get to where you're going. It will hold one

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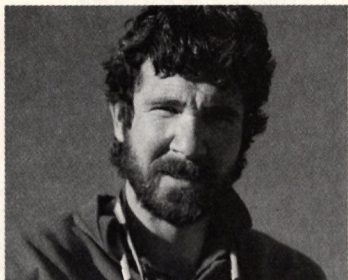


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Chris Noble: torture tester



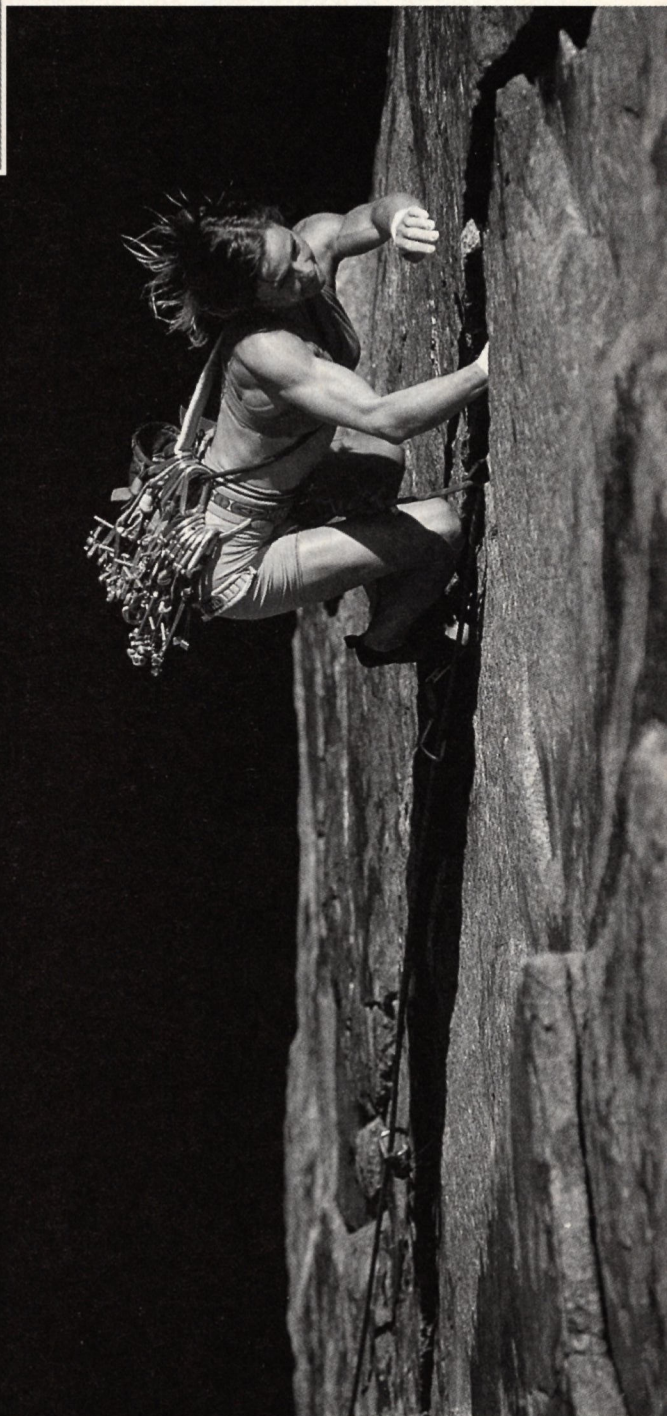
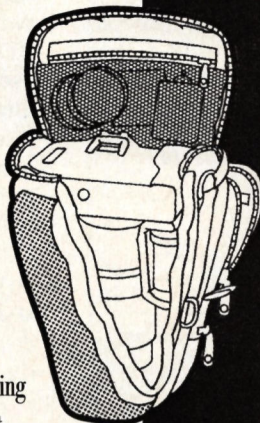
Heli-skiing, rock climbing, sea kayaking, mountain biking and ice climbing – they're all in a day's work for adventure photographer Chris Noble.

Chris Noble travels and shoots non-stop, in situations that subject his camera bags to extraordinary conditions. Like kayaking the frigid seas off Alaska, mountain biking the dry, dusty White rim Trail in Utah, shooting a Japanese Formula One auto race in monsoon conditions or taking the "bumps and grinds" of rock climbing.

All these sports require specific features in camera bags: efficient, hands-free operation for skiing and rock-climbing, close-to-the-body fit for balance in mountain biking and ice climbing, and maximum comfort for long days of tough physical activity.

Finally, Chris's work demands ease of use. Fast access for fast moving sports like heli-skiing and auto-racing. A dependable working platform for hanging over a rock face in the middle of nowhere.

You could say Chris learned about camera bags in the school of hard knocks. Today, he trusts Lowepro for all his adventure photography, because Lowepro is the only line of camera bags that meets all his needs. As Chris says, "Considering the awful things I do to my equipment, Lowepro bags work extremely well. Since Lowepro introduced the all weather system, I trust my Lowepro bags even more."



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Chris matches his Lowepro bags to the precise needs of each sport. For rock climbing, he chose **Lowepro's Topload Zoom AW** (shown left) for the protection it gives, plus the lid – a safe platform for changing film or lenses on a sheer rock face.

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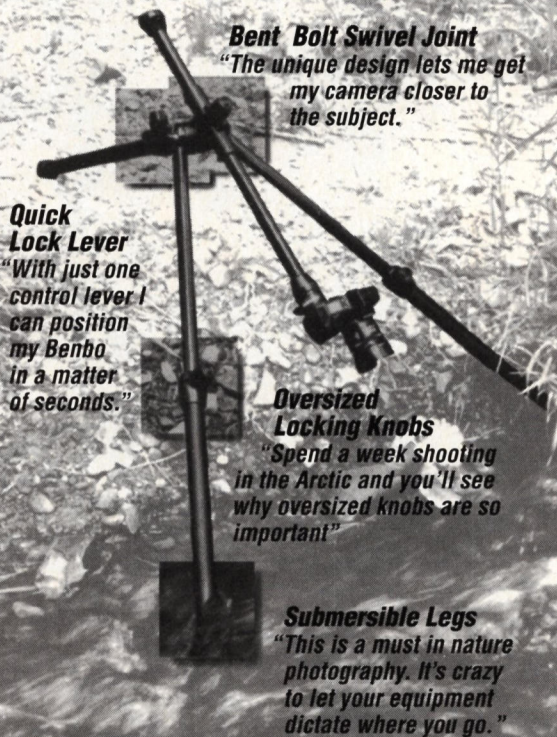
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or two SLRs and eight lenses, including long telephotos or zooms. Contact: LowePro, 2194 Northpoint Pkwy., Santa Rosa, CA 95407, (707) 575-4363.

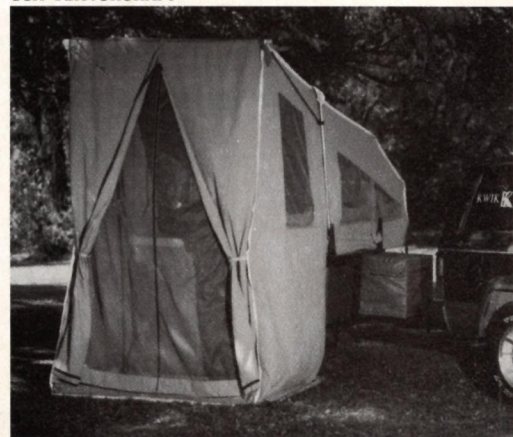


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LEICA Leica offers a modified version of its extraordinary Geovid 7x42 BDA binoculars. In the new BD, the electronic compass that was used has been eliminated. It also features an infrared rangefinder based on laser technology, accurate to $\pm$ one meter out to 1000 meters. Contact: Leica, 156 Ludlow Ave., Northvale, NJ 07647, (201) 767-7500.

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tures compact size, easy access to the cargo area and cooler interior with the tent up or down. Contact: USA VenturCraft, P.O. Box 1039, Abilene, TX 79604, (800) 472-2901.

SLIK Slik offers a new generation of titanium-finish tripods—the U5000, U6000 and U9000. Designed for 35mm cameras, the tripods' modern, ultra-smooth, fluid heads allow photographers to execute pans and tilts without annoying jumps and jitters. Contact: ToCad America, 300 Webro Rd., Parsippany, NJ 07054, (201) 428-9800.



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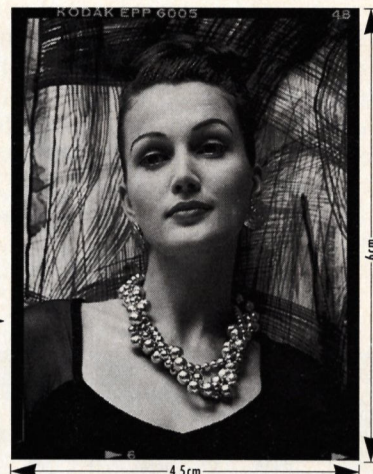
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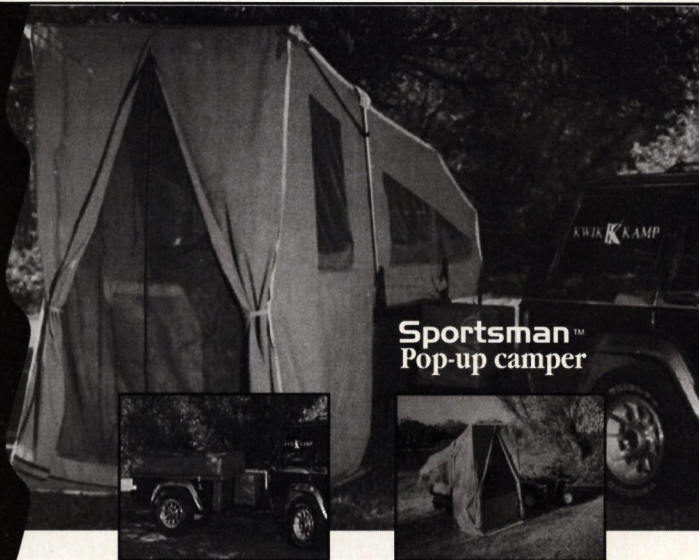
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AIR SHOW

(Cont'd from page 55)

with it and even work in those distracting elements and people whenever you can. One prized shot of mine has a couple of older gentlemen standing beneath the plexiglass nose of a World War II B-25 bomber. Their backs are turned to the camera, but the feeling of nostalgia is a wonderful element in the photo.

If you've just got to have that plane without people, be patient. Your chance

will come. When it does, open your telephoto aperture to the max to throw distracting foreground and background elements out of focus.

My stock in trade when shooting aircraft on the ground is the 20mm lens. I crawl around on the ground and shoot up, shoot from the tail forward, get right down on the spinner or prop and shoot backward, get up on the wing if it's allowed. The 20mm view adds drama and a rakish quality to any scene.

Don't overlook the details. A good tight shot of a Beech Bonanza insignia, a line of rivets flowing into and back

out of your plane of focus or a plexiglass canopy in profile with out-of-focus striped flags or tents showing through it can add wonderful aesthetic touches to your air-show album.

Here's a closer look at how to use specific lenses to best advantage.

Wide-angle: Great for dramatic distortions of airplanes, wide panoramas of the air-show environment and its festive colors, getting the entire airplane into the shot from a close distance. Vertical wide shots give dramatic angles of both plane and sky. Screw on a polarizer to punch up the sky and pop out the clouds.

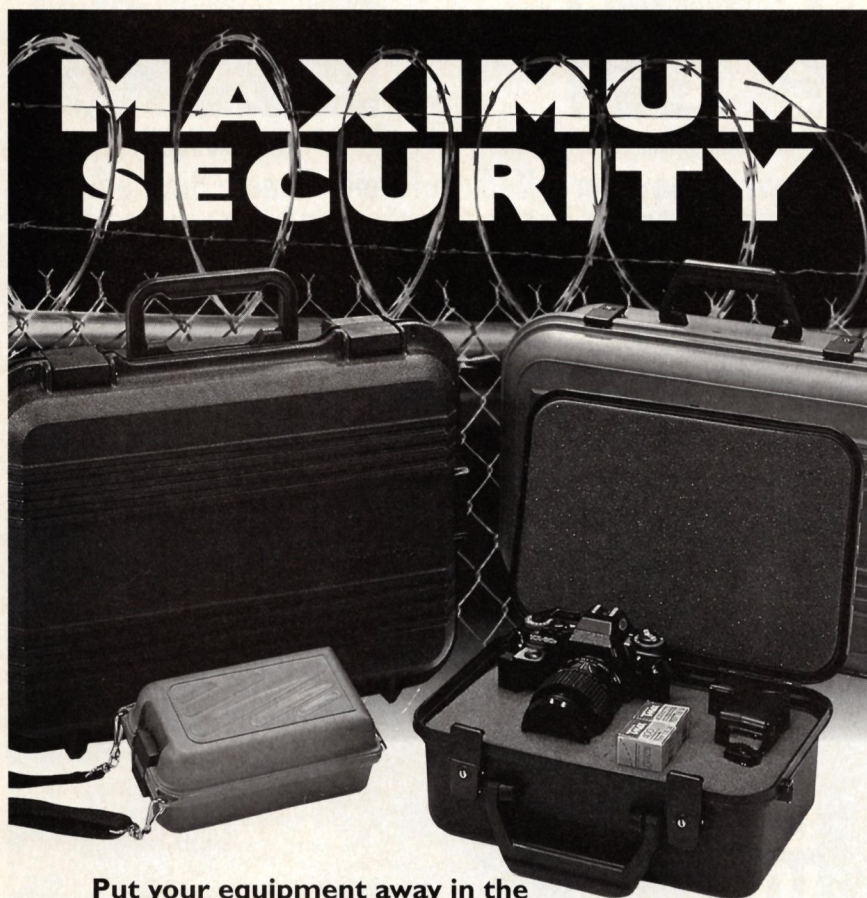
A couple feet of elevation can give you a fresh perspective. Consider anything: an overturned trash can or bucket, a low wall, table, chair, exterior stairs, over the side of a grandstand. Put one of your (lightest) kids on your shoulders, hand them the camera and tell them what you want. It's good for building confidence—both ways—because you'll probably be surprised how well the little nipper's shots turn out.

Telephoto: Bigger really is better at air shows because of the distance of your subjects. When I shoot air action, I like to do it hand-held for reasons of mobility and freedom. Even most modestly sized 300mm lenses aren't too heavy to hand-hold. A good rule of thumb: When hand-holding, try to have your shutter speed at least equivalent to your focal length, i.e., for a 300mm lens, minimum "no-shake" shutter speed should be at least $\frac{1}{300}$ sec. or faster.

I can hand-hold at $\frac{1}{500}$ sec. or even slower—with practice—and so can you. Caveat: The faster the shutter speed, the more you'll "freeze" the props. Planes in the sky with frozen props look weird. It then becomes a trade-off between aesthetics and the slowest shutter speed you can reliably hand-hold. To get a pleasing, dramatic prop arc, shoot around $\frac{1}{25}$ sec. Best bet for guaranteed results is a good tripod with a smooth head with which you've practiced making pans. Then you can shoot down in the lower shutter speeds and still get good prop arcs. Monopods will work but, if you're going to lug a stabilizing device around, you might as well make it a tripod and get the full benefit.

Almost forgot: If you use a slow shutter speed ($\frac{1}{15}$ sec. or so) on airplanes taking off or landing and pull a precisely steady pan as it passes by, you'll get a sharp airplane and a neat, streaky impressionistic background.

Sans tripod, (they are, after all, big,



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heavy and clunky), I make use of whatever solid structure, rock, tree, fence or person I can find to hold my camera against.

Fine Points

The way you approach taking photographs at an air show will be uniquely your own. That's part of the fun. Here are some elements of my own style.

- "Work" the subject. If you can, spend five minutes or considerably longer with those subjects that really rev your motor. Use all your lenses to paint the story of the airplane in a variety of ways: Move in for rakish wide-angle shots from below the nose. Crawl around behind the tail and shoot a strong vertical of just the fin and rudder and markings. Slap a colored filter or gel over your lens, block the sun with the plane and shoot a colorful silhouette with your wide-angle or tele (best near sunset—there's usually less people around, too.) Also, use the telephoto to pull in elements you can't physically get close to. Always be hunting for those little elements that, even though isolated, tell the bigger picture—and that will give you a special warm feeling of recollection when you see those images again on film.

- Fill-flash: Today's built-in flashes can't be beat. They take all the guesswork out of adding just enough light to a shadowed or subdued area. Airplanes respond vividly to artificial light. Cockpit shots, when you can get them, really come to life when you toss in some fill. You can light up that friend or relative kneeling in the shadow of a big warbird and, with a little imagination (sunset background, flash on plane-and-person foreground), you can get professional results every time.

- Smooth hand-held pans: Whatever lens you're using, practice on a moving target in the sky. Try to lock the aircraft into your viewfinder and keep it there. Feel the speed of the pan and try to keep it constant then, just like a rifle, squeeze off the shot or shots so it's actually a surprise when the shutter snaps.

- Don't be afraid to take chances: You can toss the mistakes, but you can't make a print from a shot you didn't take. Try weird angles. Lay down on the ground. Stick the sun in your viewfinder just to see what happens. (Sometimes all those colored hexagonal lens flares add a rainbow string of geometric beauty you'll dig.) Shoot wide-angle from the tail, the side, above and below the airplane. Try colored or special-effects filters. Use a different

lens. Put the wide-angle to your eye and walk completely around the airplane (carefully—wingtips and props are closer than they look!) Bob up and down as you move. You'll look like a whooping crane, but you'll be amazed at the fresh perspective.

- Look for non-airplane details and icons: Every location is unique. Reno, with its high desert mountainscapes and clear blue sky, is markedly different from Oshkosh's verdant, humid foliage and gray-white skies. Take panorama shots of hangars with airplanes and people in front of them,

especially from high angles. Photograph babies asleep in their strollers, hugging their toy planes. Take grab shots of signs, banners and placards that round out the aviation ambience.

And, finally, never fail to remember that you're shooting your own bit of history. Some of these airplanes will end up in museums. Most will simply pass from the sky as surely as the most vibrant spring flower fades from the hill. This is your chance to capture and interpret your own bit of history, for you and yours that will follow. And don't forget to bring your kid. **or**

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WARM LIGHT

(Cont'd from page 27)

tains are blue, which is strange because you don't remember them being that color. The reason the mountains appear blue is because at greater elevations, the color temperature is much higher.

Another dilemma outdoor photographers come across is photographing a scene in the shade on a cloudless, sunny day and discovering that the once-pristine white flower has now turned a ghastly cyan/green on film. The problem arises when there's a predominant color from a clear-blue sky and surrounding vegetation. Those sources of light reflect their colors onto and around your subject and ultimately record their hues onto the film. Incidentally, a northern blue sky can reach as much as 15,000 degrees K, which will certainly record very blue on film.

To help solve the "blue problem," Kodak is currently manufacturing slide films, such as Ektachrome Lumiere X, which have a warmer bias to compensate for the color shift. Another way to deal with the color change is to use a yellow or warming filter to offset the blue cast, just as you'd use a different film or filters for indoor photography to compensate for the color temperature given off by artificial lighting. To balance the warm tone from tungsten lights, you'd use a blue filter because tungsten lights are much lower in color temperature at around 3200 degrees K. Another solution is to shoot at a different time of day, when the light is much warmer, such as early morning or late afternoon—the magic hour.

Sometimes, we may not want to compensate for the color shift because of the subject matter itself. An example is an icy scene in which the blue would reflect a feeling of cold.

Warm and cool colors can be used to your advantage by including them as important components in your composition. You could incorporate a warm (red or yellow) subject and balance it with other elements that have a cool color to them, such as blue or green. When photographing the evening sun, the warm light will contrast with the cool light of a shadow; a bright-red canoe surrounded by an emerald lake would be complementary, artistically speaking. By using warm and cool colors together in your photographs, you can add dramatic punch, which may have been lost by using colors that are alike or that don't complement each other.

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Karen Lorenson

Karen Lorenson
Gallup, NM

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Lebanon, PA



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Light Meters

Incident and reflected metering and when to move beyond your built-in

BY STEVE ANCHELL



the meter reading by overexposing or underexposing the film accordingly.

In-camera meters that don't allow exposure manipulation distance the photographer from the creative process and discourage even a basic understanding of the way film reacts to light.

Calculating the exposure involves active participation by the photographer.

Using a separate, hand-held meter has several advantages. The first is that it can be used with any camera (unless the camera is fully automatic and doesn't allow independent control). They're flexible enough to take any type of reading and, with the aid of attachments, can be used for a variety of situations in which a built-in meter wouldn't function (e.g., darkroom enlarging meter, color meter, macrophotography and microphotography readings). Also, by learning the capabilities of one meter in all situations, it becomes possible to

achieve remarkable exposure consistency. For these reasons, some photographers

prefer to use a hand-held meter. Many photographers use a combination of both built-in and hand-held meters.

Light meters, in-camera or separate hand-held units, come in two categories, reflected or incident. Most meters are of the reflected type. They measure light *reflecting off* the subject. The meter is pointed at the subject along the axis of the camera's lens or through the lens itself.

Most reflected meters are of the averaging type with an angle of view that approximates that of a normal-focal-length lens, 30° to 50°. The meter reads the image area and determines an exposure that's the average of all the tones reflecting off the subject.

A variation on the reflected meter is the spot meter. With a spot meter, the angle of view may be as little as 0.5° so readings of very small areas can be made. This allows accurate readings without being close to the subject. Spot meters are often used when precise readings of key areas are needed. Some built-in meters can take a spot reading, although seldom as narrow as a hand-held spot meter.

Meters that read incident light are always hand-held with a wider angle of view, about 180°. They measure the light *falling on* the subject, not the light reflecting off it.

Accuracy in exposure is extremely important. Intrinsicly, this presents no great problem as an exposure meter, either hand-held or in-camera, can be set for the film's ISO in order to measure the amount of light reflected from the subject. Therefore, accurate exposure depends more on how effectively a photographer uses the exposure meter than on the choice of meter. Exposure meters average light reflected from the scene, making an overall measurement of highlights, shadows and midtones.

They then calculate the shutter speed and *f*-stop that will convert these light gradations into middle gray. For most purposes, this produces pleasing results; however, for situations in which you want other than an average exposure, you'll need to compensate.

Although guidelines are published from time to time, there's no such thing as "correct exposure."

Everything depends on how you want the image to appear.

Many modern 35mm cameras, fitted with automatic exposure systems, bypass the photographer. They respond in preset ways that may not suit every photographic subject. If you want the image to be darker or lighter, you must manipulate



L I G H T M E T E R S P E C I F I C A T I O N S

	Measuring System	Measuring Range at ISO 100	Photo Sensor	ISO Range	Power Source	Weight	Optional Accessories	
GOSSEN	Ultra Pro	Incident & reflected light for both flash & ambient light	EV -4 ~ EV 18	Silicon Blue Cell	1 ~ 800,000	9V battery	8.2 oz. w/battery	Variable angle, Multibeam, LUNA-color, Repro attachment, LUNA-probe, LUNA-sphere, PROFI-select TTL, LUNA-micro, Enlarging Attachment
	Ultra Spot	Spot reading reflex-viewing exposure meter for ambient or flash light	EV 1 ~ EV 22	Silicon Blue Cell	1 ~ 80,000	9V battery (rechargeable)	13.6 oz. w/o battery	NONE
MINOLTA	Auto Meter IV F	Incident & reflected light for both flash & ambient light	EV -2 ~ EV 19.9	Silicon Photocell	3 ~ 8,000	1 AA alkaline NiCd or Carbon-zinc battery	4.4 oz. w/o battery	Receptor jack, sync terminal, data adjustment (-0.8 to +0.7 EV)
	Spot Meter F	Spot reading reflex-viewing exposure meter for ambient or flash light	EV 1 ~ EV 22.5	Silicon Photocell	12 ~ 6,400	1 AA alkaline NiCd or Carbon-zinc battery	8.5 oz. w/o battery	Close-up lens, Sync Cord II
PENTAX	Spotmeter V	Spot reading reflex-viewing exposure meter for ambient or flash light	EV 1 ~ EV 19	Silicon Photocell	6 ~ 6,400	3 1.5V alkaline or silver-oxide batteries	18 oz. w/batteries	NONE
	Digital Spotmeter	Spot reading reflex-viewing exposure meter for ambient or flash light	EV 1 ~ EV 20	Silicon Photocell	6 ~ 6,400	1 6V alkaline or silver-oxide battery	9.8 oz. w/o battery	NONE
SEKONIC	Studio Deluxe II L-398M	Incident & reflected ambient light	EV 4 ~ EV 17	Selenium Cell	6 ~ 12,000	N/A	7.6 oz.	11 Direct Reading Slides
	Digi Master L-718	Incident & reflected light for both flash & ambient light	EV -1 ~ EV 1.99	Silicon Photo Diode	3 ~ 8,000	2 AA batteries	7.6 oz. w/o batteries	Lumisphere, Lumidisc, reflected light filter
	Dual Spot F L-778	Spot reading reflex-viewing exposure meter for ambient or flash light with 2 angles: 1° to 3°	EV 1 ~ EV 20.9	Silicon Photo Diode	1 ~ 12,500	2 AA batteries	13.6 oz. w/o batteries	NONE

An incident meter is always pointed *toward* the camera from the subject position or when it isn't possible to approach the subject at an angle and in light that's identical. Some hand-held meters are designed to make either reflected or incident readings.

Built-in meters are usually well-documented in the instruction manuals that come with the camera. If you're considering augmenting your system with a hand-held meter, however, the following information on several of the top-rated models may be of help. It isn't meant to be inclusive.

Minolta

Best known as a manufacturer of 35mm cameras and high-quality optics, Minolta also produces some excellent light meters. Of note to outdoor photographers (as opposed to studio users) are the Auto Meter IV F and the Spot Meter F.

Auto Meter IV F. In standard configuration, the Auto Meter IV F works as an incident meter for measuring ambient (available) light and, coincidentally, electronic flash. This second function is valuable in the field for close-up photography with flash.

Accessories for this meter include both a 5°/10° viewfinder and a separate 40° reflected-light attachment. The 5°/10° attachment allows reflected spot readings that approximate the angle of view of certain

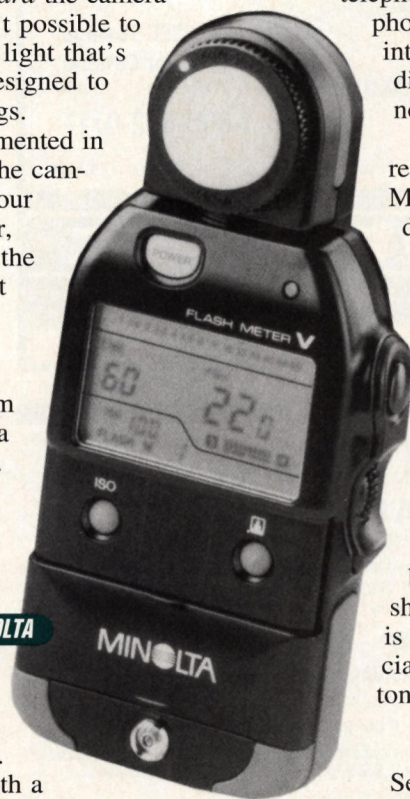
telephoto lenses. Also of interest for close-up photography is a mini-receptor that plugs into the meter's head to provide a 12mm-diameter measurement of incident light in normally inaccessible positions.

Spot Meter F. Like the IV F, this meter reads ambient and flash exposures. The Spot Meter F features both an analog and digital display on the outside of the meter. The digital display will give readings in 0.1-stop increments, whereas the analog display reads in ½-stop increments. The angle of view is 1°, marked by a circle in the optical viewfinder.

The Spot Meter F can be used as a highly accurate averaging meter by using the Brightness Difference Function. This works by first metering a mid-tone, next a highlight and then a shadow area. The difference in brightness between shadows and highlight will be shown on the digital display. This function is very useful for checking contrast, especially when a wide range of light and dark tones are present.

Sekonic

Sekonic has built a long-standing and deserved reputation for its extensive line of affordable, high-quality light meters. Sekonic instruction manuals are among the best written and easiest to follow.



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Studio Deluxe II L-398M. The Studio Deluxe II, a newer version of the Studio Deluxe, is possibly the best value in a light meter. The Studio Deluxe II is the last *quality* meter to be built around a selenium photocell. These cells, while not as sensitive as modern silicon photocells, are sensitive enough for outdoor subjects, don't use batteries of any kind and last almost forever. These meters are designed for inci-



dent readings, but have an accessory Lumigrad that allows reflected readings to be taken.

Digi Master L-718. The Digi Master L-718 is Sekonic's top-of-the-line incident/reflected light meter that measures ambient light and flash exposures.

An electro-luminescent display, both digital and analog, enables this meter to be used under extremely low light conditions. An optional 5° viewfinder, L-718VF, is available for spot readings. The pinpoint attachment, L-718PP, allows readings to be taken directly off the ground glass of medium- and large-format cameras.

Dual Spot F L-778. This meter has the distinction of being the first, though not the only, *cordless* 1° spot

flash meter. The meter has a hot shoe on top in which a Wein infrared triggering system, for use with most radio slave systems, can be fit. This is invaluable for metering electronic flash for close-up subjects in the field.

The name Dual Spot F comes from its other distinctive feature, the ability to switch measuring angles from 1° to 3°. Changeover is as simple as moving a sliding switch on the meter's pistol grip. Inside the viewfinder, two circles show the respective fields of view for each setting.

In addition to an external LCD panel, with digital and analog displays, this meter has an internal LCD display that shows aperture/shutter speed combinations, as well as aperture or shutter priority. Ergonomically designed buttons facilitate comfortable use.

Zone System buttons set highlight and shadow markings on the analog exposure scale to correspond to the latitude of the film in use, then can be shifted up or down as a unit. Once these zone markers are in place, a highlight, shadow and up to three mid-range readings may be taken and stored in memory.

Gossen

Gossen is one of the oldest and most-respected meter manufacturers. For years, they have set the standard for high-quality, hand-held incident and reflected light meters.

Ultra Pro. The Ultra Pro is the flagship of Gossen meters, augmenting the line formerly headed by the venerable favorite of professional photographers, the Luna Pro. This is the most versatile of all meters made—ever.

Besides incident, reflected and flash readings, the Ultra Pro can be converted through optional accessories into a variable angle meter (7.5° to 15°), variable spot meter capable of 1°, 5° and 10° readings, color temperature meter and a dark-room enlarging meter. Another attachment facilitates readings for copy work and, yet another, the PROFI-select TTL, allows the meter to measure exposure at the film plane of large-format view cameras. The LUNA-probe is particularly suitable for macrophotography and for readings in normally inaccessible areas. The LUNA-micro can reliably measure the exposure required for microscope photographs.

Ultra Spot. This 1° spot meter is designed for use with ambient light or electronic flash and is specially

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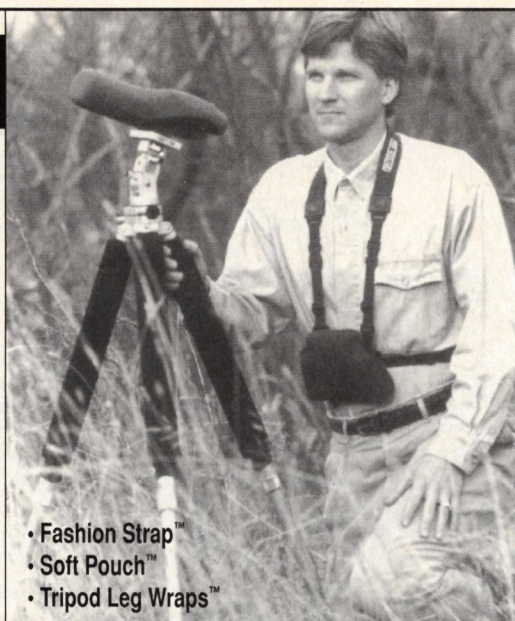
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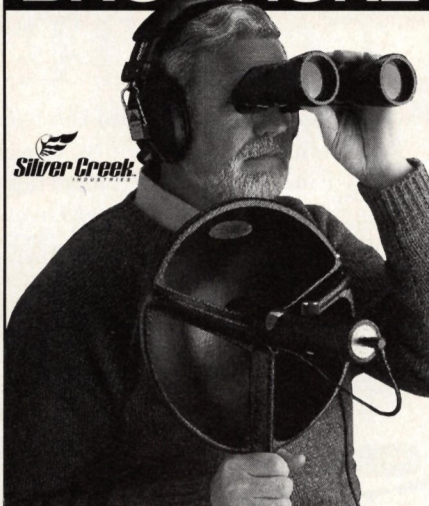
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designed with users of the Zone System in mind. The 15° field of view is surrounded by the display so the subject and all readings can be seen at a glance. All of its many functions, settings and measurements are controlled by means of four buttons and a sliding switch, designed to be within easy reach of your thumb.

A special filtering system adjusts the light sensor to the spectral sensitivity of film. Like the Sekonic Dual Spot F, this meter also features a hot shoe for remote electronic flash units.

Pentax

Pentax is the first name in spot meters. When all the bells and whistles have been removed, this is the spot meter for serious workers.

Spotmeter V. The Spotmeter V is a no-nonsense, strictly analog meter. Using this meter is simplicity itself. The 1° field is clearly visible in the viewfinder, just above a single linear meter scale that reads from EV 1 to EV 19. (EV = exposure value; the greater the EV spread, the more sensitive the meter.) The EV value is manually transferred to a calculator mounted on the side of the meter where the recommended exposure is read.

Digital Spotmeter. Take the Spotmeter V, make it digital, and increase the sensitivity to EV 20 and you have the Pentax Digital Spotmeter. Well, not exactly. The Digital Spotmeter is so small and light that it will easily slip into most pockets. The LED display inside the viewfinder reads EV numbers in 1/3-stop integrals for increased accuracy. Also, not only do the LEDs assure maximum visibility under any lighting conditions but, since they're devoid of moving parts, they aren't subject to jamming nor easily damaged. Thus, the Digital Spotmeter offers increased durability as well as greater convenience over its older sibling.

Both Pentax spot meters are available in a specially modified version from Zone VI Studios of Newfane, Vt., which increases their accuracy. The modified version costs only slightly more than a meter from a discount camera source. If either of these two meters interest you, the modified Zone VI version is worth the extra investment.

OP

EDITOR'S NOTE

(Cont'd from page 10)

I'd suggest that digitalization is simply the newest tool available to photographers. It's a technology to be explored, to be exploited and to be embraced as any new tool, as appropriate, taking its place in our industry.

I don't feel that it threatens our industry, but I do feel that it warrants more discussion and debate, that certain conventions of labeling, particularly in editorial applications, must emerge. This will be especially true as the availability of the necessary hardware and software puts digitalization within easy reach of virtually every practicing nature photographer, a day that's no longer very far off.

OP: *What direction do you feel your work will take in the future with regard to digitalization?*

Wolfe: I'll continue to embrace this new technology (as more and more of my colleagues will), but to embrace it as appropriate: not to mislead, but to illustrate, more broadly for advertising and commercial applications, and very selectively in editorial applications. But I'll continue to do so as I have before: with full disclosure so that the user can make an informed decision on how, when and whether to use my photographs.

But I must add that I spend as much time in the wild, worldwide, as anybody I know, and there will never be a substitute for that involvement. That's still the primary motivation for me.

I definitely don't want to have people question every image with my credit line. I don't want to be handcuffed by the people who are threatened by the future of photography.

I pride myself on being a nature and wildlife photographer and my ability to communicate the spirit and beauty of the natural world with my camera. But I also pride myself on being an artist. As such, I want to be free to challenge my craft, to create visions that excite me and move those who see my work.

• • •

Where the digital debate takes us in the future remains to be seen. Ultimately, the viewing public will decide what's accepted in the marketplace. We'll continue to touch on the issues in this magazine and will continue to hear your comments and value your opinions. Your mail will help us to establish how we cover and treat digital material in the future.

By no means is this the last word.

—Steve Werner, Editor

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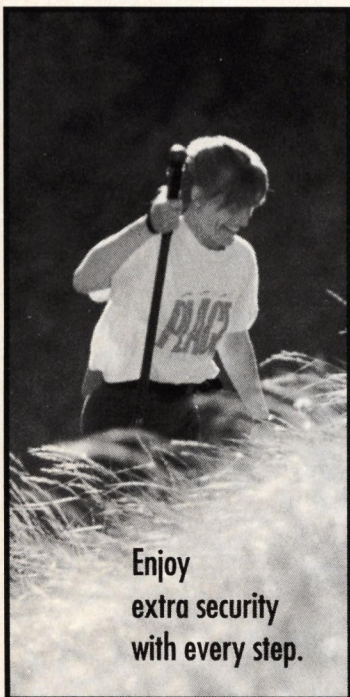
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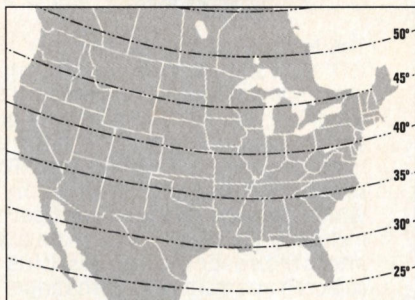
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This chart will help you be in the right place at the right time by allowing you to plan your sunrise, sunset, moonrise and moonset photos ahead of time. You'll know exactly where to be with your camera for the photo composition you want to make long before the sun reaches the horizon. Find the nearest date at top and the latitude nearest your own in the column at left. Where the two intersect, you'll find the true (or map) bearings for rise (R) and set (S), rounded to the nearest degree. When using a compass to find the spot on the horizon where the sun or moon will rise or set, obtain the magnetic declination (variation) for your area from a USGS topographic map or other source. If the declination is east, subtract it from the bearing listed below to obtain the magnetic compass bearing. If the declination is west, add it. The result is the compass bearing to use in the field. All data in Almanac is obtained through the SUNTRACKER program, written by Charles Krebs.

SUNRISE/SUNSET

Latitude	May 6	May 13	May 20	May 27
25° N	R-071 S-289	069 291	067 293	066 294
30° N	R-070 S-290	068 292	066 294	065 295
35° N	R-069 S-291	067 293	065 295	063 297
40° N	R-067 S-293	065 295	063 297	061 299
45° N	R-065 S-295	063 298	060 300	058 302
50° N	R-063 S-298	059 301	057 303	054 306
55° N	R-059 S-301	055 305	052 308	049 311
60° N	R-054 S-307	049 311	045 315	041 319
65° N	R-045 S-315	039 322	033 328	027 334
70° N	R-029 S-332	016 346	—	—

FULL MOONRISE/MOONSET

Latitude	May 12	May 13	May 14	May 15
25° N	R-102 S-261	106 256	110 252	111 249
30° N	R-103 S-260	107 255	111 251	112 248
35° N	R-103 S-260	108 254	112 250	114 247
40° N	R-104 S-259	109 253	113 249	116 245
45° N	R-106 S-258	111 252	116 247	118 243
50° N	R-107 S-257	114 250	118 244	121 240
55° N	R-109 S-255	117 247	122 241	125 236
60° N	R-113 S-253	121 244	128 236	132 231
65° N	R-117 S-250	128 239	137 229	142 221
70° N	R-125 S-245	140 231	155 217	— 203

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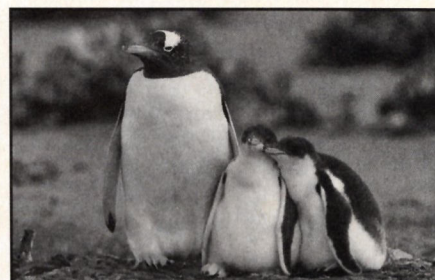
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FAVORITE PLACES

GREAT SMOKY MOUNTAINS

■ **Location:** The Great Smoky Mountains National Park has long been a paradise for photographers, with some 520,000 acres of extraordinary beauty in Tennessee and North Carolina.

Nestled between green rolling mountains in the southwest corner of the park is Cades Cove, a valley rich in scenic beauty, natural history and wildlife. This 4000-acre area was once home to as many as 708 people until it became part of the national park in 1936. At that time, the park service plan was to remove all evidence of human habitat and let the cove return itself to its natural state. During the process of removing the buildings, it was suggested that some structures be preserved for future generations to see, for these people and their fast-disappearing way of life was an inseparable part of the mountains and their history.

Today, Cades Cove contains an 11-mile, one-way loop road that winds around the valley past many rustic log cabins with split-rail fences, beautiful old churches and interesting barns, all of which make marvelous subjects. Some of the most popular structures are the Becky Cable House, the Cable Mill, an old barn filled with antique farm implements and the Tipton-Oliver farm with its unusual cantilevered barn, a mandatory stop for photographers.

For many, the biggest attraction in the Cades Cove area is the white-tailed deer, and as many as 75 deer have been spotted in one day. Eight-point bucks are very common, and some as big as 13-point have been seen. The deer in the cove are very approachable, even for those with limited equipment. With a little work, good images can be obtained with a 200mm lens. I prefer to use at least a 300mm, which allows a greater working distance and doesn't put as much stress on the animals. The cove also abounds with other wildlife, such as black bear, groundhogs and coyotes. The endangered red wolf has been reintroduced into the cove and, while this animal is very elusive, you may be lucky enough to spot one crossing an open area.



TEXT AND PHOTOGRAPHY BY HAROLD R. STINETTE

■ **Weather:** Summer can be hot and humid, with occasional thundershowers; nights are usually cool, so carry a sweater or light jacket. Daily temperatures in spring and fall are normally comfortable, with warm days sometimes lasting into December. Winter is very rainy, with the possibility of ice and snow.

■ **Photo Experience:** For photographing wildlife, I've used everything from 200mm to 600mm lenses, depending on the subject and how comfortable it is with me. A 300mm with a 1.4X teleconverter is my preferred combination. I use a 24mm to shoot scenics and the area's rustic buildings, which allows me to tie in an interesting foreground with my main subject. For subjects like insects and spider webs, I prefer a 200mm macro. My film choice for macros and scenics is Fujichrome Velvia 50; for wildlife, I like Fujichrome 100 and Kodak Lumiere 100.

For more information on Cades Cove, including travel-planning assistance, contact: Smoky Mountains Visitors' Bureau, 7906 E. Lamar Alexander Pkwy., Townsend,

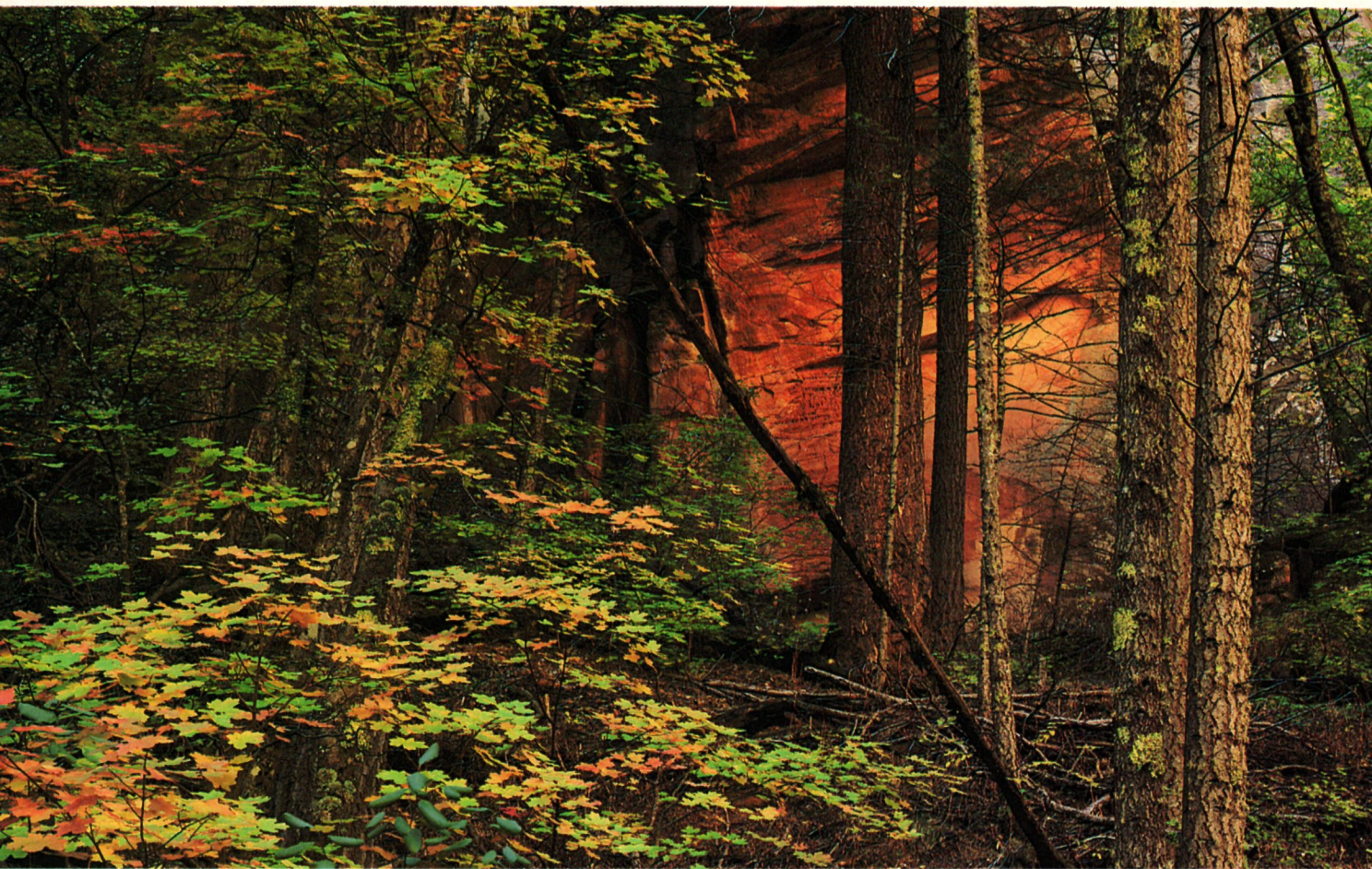
TN 37882-4033, (800) 525-6834 or (615) 448-6134; or Great Smoky Mountains National Park, 107 Park Headquarters Rd., Gatlinburg, TN 37738, (615) 436-1200. **OR**

■ **Best Times:** Spring brings a rejuvenation of new leaves and flowering dogwoods to the forest and mountainsides. In May, newborn fawns and their mothers are often seen feeding along the edges of the fields. Rainy summer days are great for moody shoots around the cabins and barns, while late summer is a good time to see black bears as they forage for ripening wild cherries. Autumn is popular for photography in the cove as well. Besides the traditional fall colors, the early-morning photographer is rewarded with dew-covered spider webs, motionless insects and wonderful sunrises. This is also the time when the cove is most crowded, so it's best to visit during the middle of the week. As the winter months arrive, the whitetails are looking their best. They've put on their winter coats, getting ready for the cold weather ahead.

Tennessee

N. Carolina

LARGER FORMATS



T H E 4 x 1 0 A L T

When this pro couldn't get what she wanted with existing formats, she created her own

TEXT AND PHOTOGRAPHY BY LONNA TUCKER

A few years ago, I came across Sonia Bullaty's *Sudek*, a book about Czech photographer Joseph Sudek. I was fascinated by his unique vision, but especially drawn to the panoramic images he made in the parks and gardens of Prague. Sudek used an 1894 Kodak camera, with a long, rectangular format that was roughly 10x30cm, and one I very much wanted to explore.

Gradually, I began to consider ways of making panoramic photographs. I tried triptychs out of 4x5 vertical images butted together, a 6x12cm roll film

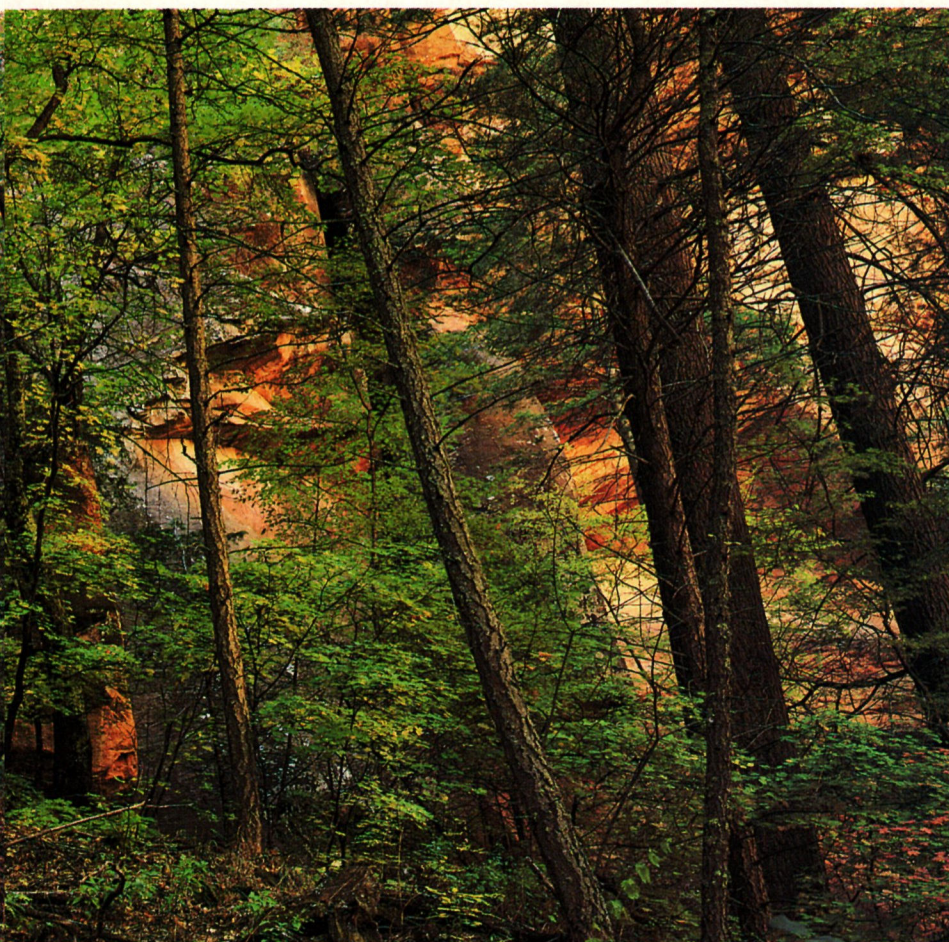
back for the 4x5, a Roundshot 120 and the Fuji 6x17cm camera. The Fuji was a good camera and format but, at the time, I was frustrated without the controls and movements of a view camera and the choice of interchangeable lenses. (Of course, my new 4x10 camera has several interchangeable lenses, but still no tilts or shifts.)

Not finding an answer, I set all this aside and continued to photograph with the more traditional large formats—4x5, 5x7 and 8x10. Then, one weekend in the spring of 1991, my husband and I were invited by Jay Dusard to photograph with him in

the Granite Dells near Prescott, Ariz.

Jay was working with his 8x10 Dearnorff and a 90mm Rodenstock Grandagon lens that didn't cover the format. Later, in his darkroom, he could print the middle of the image, roughly 4x9 inches masked off by his printing easel, resulting in a panoramic print. Jay's experience inspired me, and I began to think about panorama again.

Within the week, I started considering the advantages of a 4x10 view camera. The format is large enough to contact print for alternative processes, yet small enough to be printed through an enlarger. I could chop 8x10 film in half, saving considerable money. For optics, I wouldn't require anything new. I could use the 115mm Grandagon, 210mm Sironar-N, 300mm Nikkor M and 450mm Nikkor M, all originally purchased for the 4x5 sys-



“Secret Mountain Wilderness” from the West Fork of Oak Creek Canyon in Arizona.

Canham 4x10 field camera, Rodenstock 210mm Grandagon, Heliopan warming filter, Fujichrome Velvia, 1 minute at *f*/32

looked at it—the 1:2½ aspect ratio is visually dynamic, and it’s very natural for me to think and see within the constraints of the 4x10 frame.

Instead of creating my own format, an option would have been to use the 8x10 format and crop the 4x10 image from a sheet of 8x10 film. My personal problems with this method were twofold. The first I discussed earlier, that I would get only one picture instead of two from each expensive sheet of film. The second is that I’m a small person, and to add the weight of a full complement of lenses, film backs and camera in the 8x10 format in addition to the non-negotiables (tripod, focusing cloth, photo vest, clothing, food and water) is out of the question. I’m loaded up with 30 or more pounds of equipment as it is with the 4x10.

Finally, the panoramic format takes some forethought. When choosing subjects, I look for the feeling of being connected to the places I’ve chosen. I recognize great locations because I enter a state of heightened awareness that allows a refined and careful vision to take over. It’s all a part of why I photograph; I want to hold on to the experience, to have a little piece of it for myself and possibly share it with others. Through my photography, I want to stimulate the realization of what is alive on this planet. **OP**

***Lonna Tucker** is a professional commercial photographer who lives in Phoenix, Ariz.*

ERNATIVE

tem, as well as Schneider’s 72mm *f*/5.6 Super-Angulon XL (with a 115-degree field angle) and 90mm *f*/5.6 Super-Angulon XL (with a 110-degree field angle). These focal-length lenses all cover the 4x10 format with some movement and offer a wide range of creative choices. A 4x10 field camera seemed the ideal panoramic format.

The next step was to call Keith Canham, who builds a very fine walnut camera in 5x7 and 8x10 formats, and ask if he would build a custom 4x10 field camera for me. Canham was immediately excited about the idea and offered to temporarily modify an 8x10 Canham field unit until he could work out the logistics of designing and building a new camera and film holders.

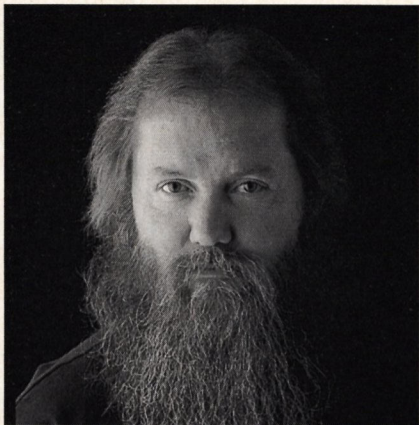
Finally, in February of 1992, Canham finished his first 4x10 field cam-

era prototype and went straight into production. The camera weighs only 6½ pounds; film holders weigh half as much as an 8x10 holder. This lightens the load when backpacking and is an advantage to the format, which I truly appreciate.

I then began working with the camera, photographing wide panoramas, but also exploring the format in a more intimate way with longer lenses. I’ve since used the camera to create a lot of landscape images, but I see great potential in it as an architectural tool and in other commercial applications.

The 4x10 format allows me to see the world the way I’ve always





Radnor Lake And Walden Pond

Getting to know one location inside and out allows visitors to sharpen skills as well as bond with nature

BY JOHN NETHERTON

A battle was waged between the environmental community and land developers over a small lake in South Nashville in 1973. Radnor Lake had been created back in 1915 when the Louisville & Nashville Railroad purchased 1000 acres and began construction of a dam to hold water for its steam engines at Radnor Yard, three miles away. At the time, no one could have guessed that this area, left relatively undisturbed, would not only become a sanctuary for neotropical migrants and other wildlife, but also someday attract nearly a million people to traverse its lakeside trails.

In 1973, Earth Day was new and life was exciting, fight-

ing for the causes we knew to be just and right. I'd spent my first year at the University of Tennessee at Nashville majoring in zoology, and I had the fire of youth and all this new knowledge to put to use. Oh, if only I knew as much now as I did back then.

Radnor Lake was rapidly becoming a symbol for those in the community who wished to save all vanishing things—at least we did protect the lake. Here was an area not grandiose by any stretch of the imagination but, as Henry David Thoreau had said of Walden Pond, the scenery “is on a humble scale and, though very beautiful, does not approach to grandeur.” This small body of water would find me and my new Nikon FTNs practic-



ing what would later become not only a passion, but a way of life.

Like my newly acquired knowledge in animal and plant studies, my early photography would be technically accurate, but it lacked the emotion I wished to convey, the feelings that spilled out as I beheld geese gliding silently through the morning fog or as I watched the still waters broken by a bass lunging skyward to catch a damselfly. I was still very much stuck on learning *f*-stops, shutter speeds, depth of field and so on.

During this time, I discovered Thoreau and his writings about Walden Pond. I shot roll after roll of film at Radnor and read page after page of Thoreau. As I developed my photography technique, I also discovered that, rather than paying conscious attention to shutter speed, *f*-stops and metering, I was now only aware of the scene or animal within the viewfinder. For me, photography began to resemble breathing; like most people, I wasn't aware of every breath—it had become more of a reflex. Some photographers, Ernst Haas among them, would liken this to a Zen-like state; Eugen Herrigel's *Zen in the Art of Archery* was a favorite book that Haas would advise his students to read.

When a friend expounded upon the similarities between Walden and Radnor, Thoreau's way of walking softer became more appealing. I began to recognize every willow and cottonwood that lined the banks of Radnor's placid waters. I knew where and when the first rays of sunlight would strike the lake as the sun rose over the surrounding hills. I came to know when to expect the lake to be engulfed in thick fog. So much in tune with my surroundings did I become that I could take friends to an area called Prothonotary Corner at approximately 5 p.m. and have them watch as a punctual muskrat made its daily rounds.

Everyone has a nearby place like Radnor Lake to which they can return again and again, practicing their craft, learning from their mistakes, yet also coming to know what the final image will look like even before pushing the shutter release. I still go to Radnor Lake, though not as often as I once did. But, just as with old friends, there remains a familiarity—even if the trees are a little taller.

OP

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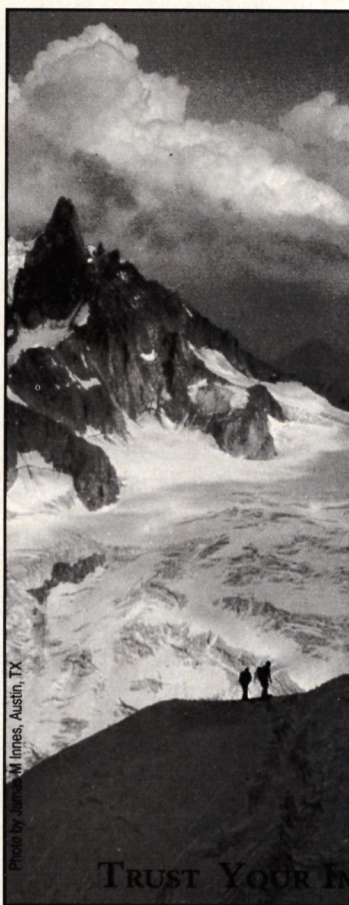
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TRAVEL & WORKSHOPS

The Islands Of Indonesia

August 18-September 3, 1995

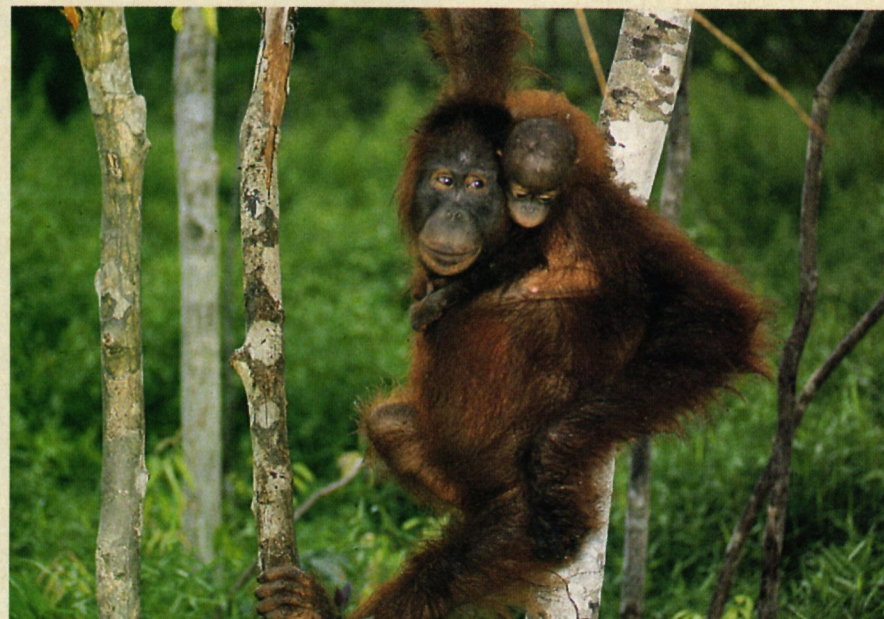
Indonesia is an island country with unparalleled photo opportunities. Orangutans, 10-foot-long Komodo dragons and barking Timor deer are only a few of the exotic creatures you'll see and photograph on some of this country's splendid 5000 islands. Veteran nature photographer Perry Conway will lead this spectacular, island-hopping adventure, which will take travelers from desert to rain forest and through all the major life zones. You'll visit the island's best sites for wildlife photography as well as areas of cultural and historical interest such as Borobudur, the world's largest Buddhist monument and one of the Seven Wonders of the Ancient World. Limited to 12 participants.

For more information, contact: Joseph Van Os Photos Safaris, P.O. Box 655, Vashon Island, WA 98070, (206) 463-5383.

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W. PERRY CONWAY/JOSEPH VAN OS PHOTO SAFARIS

sunrise shoots, and slide lectures and reviews run well into the evening. Each full day also features field shooting, practice sessions, slide shows and reviews of photographers' work. E-6 processing is available. Limited to 10 to 12 participants.

For more information, contact: Joe McDonald's Wildlife Photography, RR #2, Box 1095, McClure, PA 17841, (717) 543-6423.

The Mid-Atlantic At Its Best

May 19-21, 1995

Osprey Photo Workshops & Tours presents a photographic exploration of the South Jersey coast, which coincides with peak shorebird migration.

Wildlife photographer Irene Hinke Sacilotto leads this group to the shores of the Delaware Bay where thousands of birds stop to gorge themselves on horseshoe crab eggs before continuing their migratory flight north. Other fascinating locations include Brigantine National Wildlife Refuge, with 20,000 acres of tidal marshes and bays; the Pine Barrens, offering cedar bogs and unusual plants and orchids; and Batsto, a restored industrial center from the 18th century. All workshop sites offer participants excellent scenic and waterfowl photo opportunities.

For more information, con-

tact: Osprey Photo Workshop & Tours, 2719 Berwick Ave., Baltimore, MD 21234, (410) 426-5071.

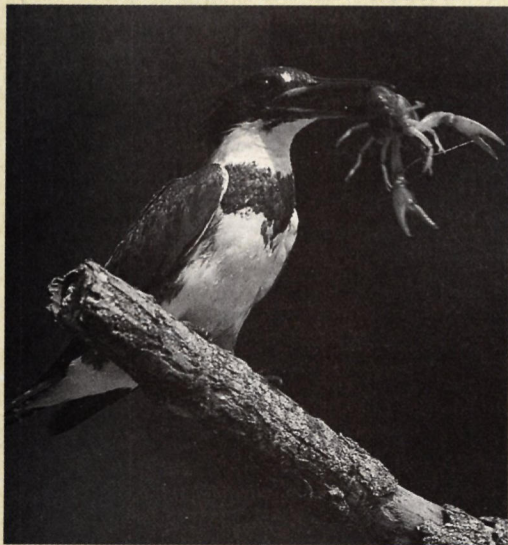
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July 5-22, 1995

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For more information, contact: Destination Himalaya, 521 N. 52 St., Omaha, NE 68132, (800) MY-INDIA or (402) 556-0303.

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TRAVEL & WORKSHOPS



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For a free Utah Travel Guide with a complete listing of guides and outfitters, contact: Utah Travel Council, Council Hall/Capitol Hill, Salt Lake City, UT 84114, (800) UTAH-FUN.

Iceland: A Journey To The Top Of The World

June 23-July 2, 1995

Iceland is Europe's second-largest island and in summer offers dramatic landscapes for photographers, hikers and nature lovers. Margie Nea, a professional photographer with the Nature Conservancy, leads this journey to one of the Earth's most geologically active

areas. Erupting geysers, thundering waterfalls and salmon-filled streams are set against expanses of lava valleys, glacier-topped mountains and plains of green tundra covered with dwarf flowers. Hiking along sea cliffs reveals numerous Arctic seabird colonies. An Icelandic guide specializing in photography and hiking will accompany the group.

For more information, contact: Advantage Travel Co., 1315 E. Main St., Richmond, VA 23219, (800) 238-2684 or (804) 783-1881.

Deserts And Oases: Death Valley To Havasu Falls

October 20-29, 1995

The open, rugged country east of the Sierras and west of the Colorado Plateau is layered with rich and unique geological and cultural histories. Landscape photographer Mark Klett, who has explored the territory for 12 years, will lead this workshop for intermediate to advanced photographers. The workshop begins near Death Valley, where the group will review portfolios and visit nearby sites, and then continues with travel through the Mojave Desert and a three-day horseback hike to Havasu Falls in the Grand Canyon. Photo

subjects include mining town ruins, drylands below sea level, hot springs, preserved traces of early explorers and a turquoise waterfall. Participants should be in good health, as you'll hike a few miles each day and, on the trip to Havasu Falls, will trek 10 miles carrying camera gear. There will be about 700 miles of personal car travel.

For more information, contact: Anderson Ranch Arts Center, P.O. Box 5598, Snowmass, CO 81615, (800) 595-ARAC or (303) 923-3181.

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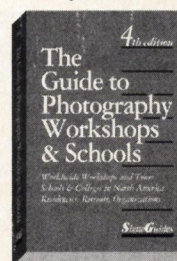


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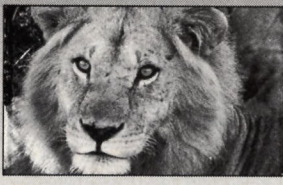
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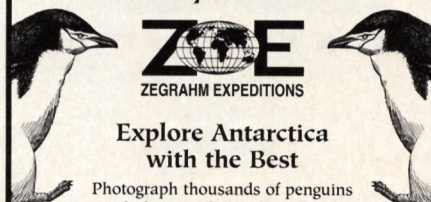
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EAGLE FLIGHT

(Cont'd from page 33)

rotating the camera, right hand firing the motordrive. Every movement was fluid and smooth, and an entire roll of film was exposed in those few seconds. Impressive.

As we sit in his studio discussing recent changes in photographic equipment, Barrie says, "I consider cameras simply a tool to create the fast-action images that intrigue me. I started out with manual focus and didn't really consider autofocus until most of the initial bugs had been worked out. In recent years, I've used three Canon EOS-1 bodies, which worked very well. Then, last fall, I upgraded to four EOS-1N bodies. Their performance has proved absolutely spectacular for fast-action photography.

"For anyone considering photographing birds in flight, I recommend a long lens of at least 400mm and a shutter speed of $\frac{1}{500}$ sec. With Kodachrome 64, that means a lens aperture of at least $f/5.6$. A motordrive is essential. It allows you to concentrate on what's happening in the viewfinder and to fire in series if the opportunity presents itself. A stable tripod is also necessary. I use a large Gitzo with a panning head and, for increased stability, I pour about 10 pounds of lead shot into each of the lower leg sections. I suspend a triangular-shaped canvas bag between the legs. It holds 10 rolls of unexposed film—out of the canisters and ready to load."

Barrie is emphatic about using Kodachrome 64. "It's what I've always used and I have no intention of changing. Until March, Kodak processed it here in Canada, but now everything goes to the states. The turnaround takes longer, but I can live with that."

When asked to share some techniques with readers of *OUTDOOR PHOTOGRAPHER*, Barrie is quite candid. "Lighting is most important. A bright, sunny day lights up the fine details of flight feathers. Knowing the wind's direction is also important. If the eagles are flying against the wind, they travel fairly slow but, with the wind, they streak by like a rocket. In the northern hemisphere, a south wind on a sunny day is ideal. The birds come from the north, flying directly toward you, and the sun lights them beautifully. The stronger the wind, the better. It slows them down and, in some cases, they hang directly overhead, providing some marvelous opportunities.

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"Even when an area is crowded with birds, I wait until the sun is in position to frontlight them properly. When this is the case—and it often is—I simply sit back for an hour or two and enjoy the experience. This gets the birds used to my presence, and it's a good time to study how the light plays on them as they fly around. When the sun is in position, I fire off as many rolls as possible because it continues moving until the lighting becomes a disadvantage again.

"As each eagle approaches, I check it closely with my 600mm lens. Experience has taught me that an average of only one bird in eight is a suitable candidate. Bald eagles don't mature until their fourth year. During the first two, they're all brown and often mistaken for golden eagles. During the third year, a faint whiteness starts appearing on their head and tail feathers and, by the fourth year, they've turned pure white. Pictures of immature eagles don't sell well, so I ignore them, as well as mature birds with dirty white feathers or missing primaries. Upward of several dozen eagles appear at times so, to avoid confusion, I select one and keep it in the viewfinder as long as feasible. With the predictive autofocus switched on, one of the camera's sensors is bound to hit the bird, so I'm always prepared to fire if something interesting or dramatic happens."

As a final tip, Barrie suggests visiting locations noted for their abundance of eagles. "A lot of photographers head for the Chilkat River in Alaska, but there are larger concentrations right here in British Columbia. At Brackendale on the Squamish River, you get far more sunny days, and it's a much narrower river so you can get closer to the action. The Chilkat's highest count was 3495 but, in December of 1993, the count at Brackendale was 3701. Instead of flying to Whitehorse, then making that long drive to the Chilkat, you can land at Vancouver International and drive to Brackendale in less than two hours."

OP



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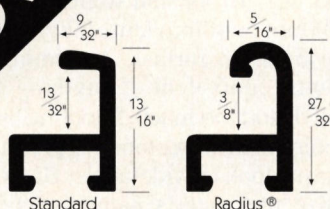
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UNDERWATER

(Cont'd from page 47)

in the world to have the latest in high-tech gear.

Brooks simply chuckles. "I have the least amount of equipment of any diver on Earth." He cites one of his personal mentors, Boris Dobrois of the former Soviet Union. "He taught me to simplify. Go for consistency. That's what it's all about." Brooks also credits Ernst Haas and his book *Creation*. "That book was shot with one camera and one lens. If you want wide-angle, back up. For telephoto, go in close." He laughs again. "Today, it's such an equipment-freakish world. But underwater, you can't pop on a wider-angle lens when a whale goes by. So you have to preplan your experience."

Brooks praises his one camera, a Hasselblad Super-Wide C given to him by Victor Hasselblad in 1968. What is his master formula for shooting underwater? "I set that Hassy to 1/25 sec. at f/8 and prefocus at six feet. That gives me a depth of field of six inches to infinity. I don't even use a viewfinder—it broke off years ago—just point the camera. After 26 years, I know what it sees anyway."

Choosing that one lens is important. The Brooksian solution calls for a 38mm or 40mm lens, fairly wide for the medium format. A 20mm is the 35mm equivalent. "Anything wider will distort too much. Shooting through a column of water tends to give a more normal look to wide-angle. But to minimize the water's natural cloudiness and light absorption, you want to move in closer anyway."

The practice of one system/one lens makes a powerful argument for mastery. "Consistency. That's what separates the pros from the amateurs. I tell my students, 'Don't try to photograph everything in the whole ocean when you go down there. Concentrate on one thing.'"

Today's new films have advanced the art, too. "You need to use a film that's flexible," advises Brooks. "I set up all my students with T-Max 100 and let them go from there. Remember, you lose contrast when you photograph through water. To increase the contrast, there's a very, very, simple formula: You *underexpose* the film and *overdevelop* the film in processing. I rate the T-Max 100 at ISO 200 or 400 and increase my processing time accordingly."

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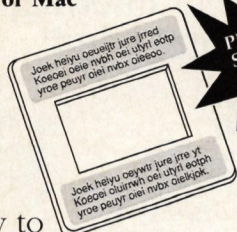
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UNDERWATER

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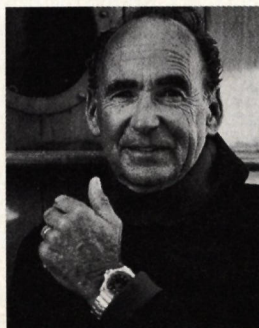
On land or under the waves, skill-building is still the path to success, whether personal or professional. "There's no difference between good wildlife photography and good underwater photography," says Brooks. "In both instances, you need the ability to isolate all the distraction around you and focus in on what it is you want to say. Underwater, you don't have the flexibility that land shooters have but, otherwise, it takes the same kind of skill that the Art Wolfes and George Lepps and Chris Rainiers have. You have to preconceive the final result."

For **OUTDOOR PHOTOGRAPHER** readers serious about making a mark in black-and-white, Brooks' advice is elemental: "Enter your work in every photo contest you can find. Go for the magazines. I'd never query a magazine; just send them my photographs. Sell your work and yourself. I really worked hard at that."

The path to mastery is paved with devotion to the practicals, and probably no black-and-white shooter today is more adept at the many nuances of darkroom manipulation than Ernie Brooks. How can a newcomer hope to compete? It isn't as daunting as it sounds. "Lots of camera clubs today will teach you master printing in black-and-white. The thing to remember is you always learn, with every situation. I'm still learning. I learn from all my students. I've missed some damn good shots, too, over the years. But they're in my heart and in my head."

Brooks looks up and smiles at one of his favorite images—an angelic sea lion he's named Spot, peering out like a puppy from a swath of kelp. "And I still try for them the very next time I go out."

For lovers of lyrical imagery, that's very good news indeed. **OP**



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GRAND CANYON

(Cont'd from page 50)

one chance to do it right, no bracketing. I'd select a spot within the run to photograph, with an unobstructed view of the whole run and close to what might be the most exciting action. Then, I exposed as if it was a brightly lit snow scene, metering off the water and opening up a stop or two. A fast shutter speed of at least $\frac{1}{500}$ sec. was necessary to stop the movement of the river and wave splash onto the boat. It's best to use a motordriven camera, and allow yourself at least 15 exposures for each set of rapids. I suggest shooting a lot in the rapids, as a wave can totally hide the people in the boat, making it less spectacular than an

*The Grand Canyon is truly
one of the world's natural
wonders, and a trip down the
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image that shows people dwarfed by the huge waves.

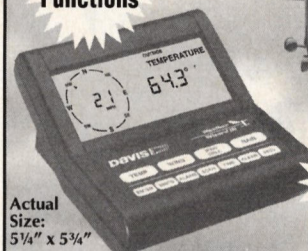
Some of my most effective shots showing the exhilaration of the rapids came from a position in the bow looking back at the boatmen and passengers. From this position, the waves on the bow splashed over my back and in front of the camera, hitting the people in the boat. The 20mm in the Ewa-Marine bag proved to be very effective. Small- to medium-sized rapids worked fine for these action shots.

Exploring the side canyons, such as Elves Chasm, Havasu, Matkatamiba and Deer Creek, was the highlight of my trip. These canyons are exquisite, with hanging gardens, water-sculpted walls and numerous waterfalls. Each turn lures you on as you wait to see what beauty lies around the next bend. Shooting the side canyons required a day pack for carrying camera gear, film, water, filters, etc. Free hands are often needed to negotiate the steep parts of the terrain.

In the side canyons, I carried a polarizing filter and an 81B and 81C warming filter as well as graduated one-stop and two-stop neutral-density filters. The polarizing filter was used to take the glare off water and vegetation and especially canyon walls in the sun. The

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GRAND CANYON

rock walls are covered with mostly minute crystals that reflect a slight glare which dilutes the integrity of the true color. By eliminating the glare, canyon colors are more saturated.

Hold the polarizer to the eye and check scenes to decide on its use. The graduated neutral-density filters allowed canyons that were in full sun on one side and shaded on the other to be photographed. When shooting in totally shaded canyons, I used a warming filter such as the 81B or a warmer version, the 81C. The exposures were often long to accommodate a small aperture for depth of field or a two-stop loss from a polarizer. Long exposures require dealing with reciprocity. After a certain length of exposure, depending on the film, 8 sec. for Fuji and 2 sec. for Ektachromes, the exposure requires additional light. For most Fuji slide films, I add a $\frac{1}{2}$ -stop for 8 sec., $\frac{1}{2}$ -stop for 16 sec., $\frac{1}{2}$ -stop for 32 sec. and one stop for a 60-sec. exposure. Make some tests on your chosen film before you leave, and bracket your long exposures.

Grand Canyon trips are best booked well in advance. Trips are available from spring through summer and into fall. The river flow depends more on the demand for electricity than the season. Each season has its advantages and disadvantages. Spring and fall have a lower sun angle, hence different lighting. It's also cooler during these months. Spring has flowers, but the water is muddy and discolored. The waterfalls are fuller in the spring; unfortunately it can also be windy. During spring trips, there are fewer boats on the river, making it feel like more of a wilderness experience. Summer is hot, with clear water and more trips available.

The Grand Canyon is truly one of the world's natural wonders, and a trip down the Colorado River is a delightful way to experience and photograph it. The combination of geology, adventure and sense of comradeship will prove hard to equal.

OP



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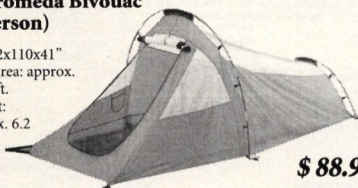


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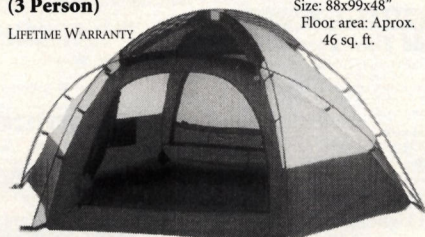
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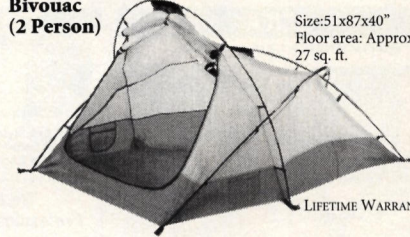
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Lightweight, freestanding bivouac has good floor space and headroom, and a handy little vestibule for storing gear. Has easy set-up clip/sleeve system, and good stability from the unique semi-geodesic pole arrangement. Outer surface of fly is silver aluminized. Generous PU FR coating provides maximum protection. Comp. with fly, Aluminum pegs, guylines, Stuff sack and instructions.

With Shockcorded USA Fiberglass poles (weight: approx. 6.6 lbs.)

\$99.95

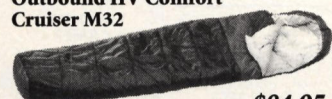
With Easton Aluminum Poles (Weight: approx. 5.2 lbs.)

\$129.95

Sleeping Bags

Outbound HV Comfort Cruiser M32

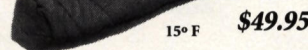
20° F LIFETIME WARRANTY



\$84.95

3 season. Mummy bag with 2 lb. of Polarguard HV (High Void) insulation and offset quilt, wraparound, layered construction - 3 layer upperside, 2 layer underside. 210T taffeta nylon shell has zippered chest pocket. Lining is fiber-proof polyester/cotton. Formed hood has zippered pillow compartment. Box foot. Zippered and shoulder draft tubes. 2-way, YKK nylon coil zipper. Durable 6 oz. Oxford nylon stuff sack. Total Weight: approx. 4.5 lb. Size 32"x92"

3 Season Sleeping Bag



15° F **\$49.95**

Popular, mummy-shaped bag has 210T taffeta nylon shell and fiberproof cotton lining. The insulation is 3 lb. of Hollosoft in double layer. Offset quilt construction. The three-quarter length. 2-way nylon zipper has insulated draft tube behind it. Box foot and formed hood. Total Weight: approx. 5 lb. Size 32"x87"

Right Zipper or Left Zipper (please specify)

2-Pc. Special! \$89.95

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12" Plastic Tent Stake 99
12" Plastic Tent Stake 1.29

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• Great for organizing odds and ends
• Drawstring closure

7x10" **\$4.95**
9x12" **\$5.95**

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MANUAL for AUTO FOCUS CAMERAS

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18/2.8	289.95	289.00	322.95	292.50	-	-
24/2.8	132.95	134.95	179.95	129.95	-	-
28/2.8	85.95	-	-	-	-	-
28/1.8	189.95	193.95	193.95	192.50	-	-
50/2.8 Macro	184.95	169.95	234.00	174.00	-	-
90/2.8 Macro	274.95	276.00	319.95	279.00	-	-
180/2.8 APO Mac	689.00	689.00	689.00	689.95	-	-
180/5.6 APO Mac	284.95	284.95	334.95	284.95	-	-
300/2.8 APO	2100.00	2100.00	2200.00	2100.00	-	-
400/2.8 APO	449.95	429.95	494.00	424.00	-	-
500/4.5 APO	3000.00	3000.00	3100.00	3000.00	-	-
500/7.2 APO	509.95	509.95	539.95	509.95	-	-
600/8	344.95	339.00	339.00	339.00	344.95	-
18-35/2.5-4.5 UC	419.95	415.95	445.95	415.95	-	-
21-35/3.5-4.5	365.95	-	-	-	-	-
24-50/4.5 UC	154.95	139.00	188.95	144.00	149.95	-
24-70/3.5 UC	148.95	148.95	173.95	148.95	149.95	-
28-70/3.5-4.5 UC	105.95	114.95	134.95	109.95	114.95	-
28-70/2.8	274.95	270.95	279.95	270.95	-	-
28-105/4.5 UC	184.95	179.95	199.95	179.95	-	-
28-200/3.5-5.6 UC	209.95	209.95	219.95	209.95	209.95	-
35-80/4.5 UC	89.95	93.95	104.95	93.95	93.95	-
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70-210/4.5 UC	104.95	108.95	129.95	104.95	114.95	-
70-210/2.8 UC	284.95	284.95	304.95	284.95	-	-
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75-300/4.5 APO	234.95	-	-	-	-	-
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70-210/4.5 UC Power Zoom	-	129.95	-	-	-	-

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24/2.8 242.5	24. 242.5
24/2.8 242.5	24. 242.5
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18-70/3.5-4.5 Compct.	289.00
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New 35-105/2.8	269.00
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28-105/3.5 Ser 1	159.95
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24-40/2.8 ATX	249.95
24-70/3.5-4.8 SXZ	183.95
28-70/3.5 SXZ	109.95
28-105/3.5-5.6 SXZ	183.95
28-200/3.5-5.3 SXZ	179.95
60-300/4.5-5.6 SXZ	189.95
70-210/4.5-5.6 SXZ	189.95
80-200/2.8 APO ATX	249.00
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150-500/5.6 ATX APO	929.00
2x 7 element	79.95
28-70/2.8	214.00
24-70/2.8	208.00
28-70/2.8 ATX	109.00

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Dist Macro #244	11.30
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QB-C Quick Charge	59.95
QB-C Quick Charge	59.95

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2400mm 92.95	93.95
2520mm 94.95	95.95
2640mm 96.95	97.95
2760mm 98.95	99.95
2880mm 100.95	101.95
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3120mm 104.95	105.95
3240mm 106.95	107.95
3360mm 108.95	109.95
3480mm 110.95	111.95
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5520mm 144.95	145.95
5640mm 146.95	147.95
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FP-4 (125)	—	2.25	2.80	2.29	25.95	28.20
XP-2 (400)	2.59	2.99	2.35	—	34.65	—
HP-5 Plus (400)	2.20	2.80	2.12	25.69	29.89	—
Delta (100)	2.40	3.49	—	—	—	—
Delta (400)	2.59	3.43	—	—	—	33.85
Delta 400 (135-20)	1.49	—	—	—	—	—

ILFORD SHEET FILM

	25	40	8x10
FP-4 Plus (125)	12.49	47.49	41.49
HP-5 Plus (400)	12.49	47.49	40.95
XP-2 (400)	14.90	57.89	49.79
ORTHO	12.49	—	47.95

ILFORD HP5 PLUS

35mm	24 Exp.	36 Exp.	120	220	100'
FP-4 Plus (125)	12.49	47.49	41.49	—	—
HP-5 Plus (400)	12.49	47.49	40.95	—	—
XP-2 (400)	14.90	57.89	49.79	—	—
ORTHO	12.49	—	47.95	—	—

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New! Captiva, Single (100).....	9.80	Spectra HD (100).....	8.99
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88 Single (8).....	9.49	108 Single (8).....	9.79
665 Single (8).....	8.59	669 Single (8).....	8.99
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691 Single (8).....	11.75	Plus 100 Twin (16).....	16.95
Pro 100 Twin (16).....	17.75	Plus 100 Twin (16).....	16.95
Polaroid Pro 100 / 664 Twin (20).....	17.98		
Fuji Pro 100 (100).....	14.65		

PACK FILM 4x5 (Images)

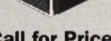
552 (8).....	13.75	552 Bulk (240).....	379.
553 (8).....	13.85	554 (8).....	13.75
559 (8).....	21.69	559 Bulk (240).....	619.95

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52.....	32.00 /	Polaroid ISO 400 34.75 / 329.	
53.....	33.75 /	54.....	33.75 / 329.
55.....	35.00 / 339.	57.....	37.95 /
59.....	52.00 / 499.	Polaroid (1000).....	37.25
Polaroid Pro 100.....	56.75 / 529.	Polaroid 647 56.75 /	

SHEET FILM 8x10 (Images)

803 (15).....	112.95	808 (45).....	112.95
809 (15).....	112.95	809 (45).....	329.00



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Professional 1° Spot Meter gives a perfect exposure reading on the Exact area where a light reading is required. That way you can measure the key areas of the subject you're photographing. Comes with eyecup, strap and case.

Adorama

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COLOR PRINT FILM

Film	ASA	135-24		135-24 Proc.		135-36		135-36 Proc.	
		DI	Roch.	DI	Roch.	DI	Roch.	DI	Roch.
Ektar (25)	—	*4.29	—	*10.61	4.65	*5.07	13.34	*13.76	—
Ektar (100)	2.70	*3.65	9.02	*9.97	3.19	*4.77	11.88	*13.46	—
Ektar (1000)	—	*5.73	—	*12.05	5.39	*7.29	14.08	*15.98	—
GA (100)	1.84	3.19	8.16	9.51	2.49	4.09	11.18	12.78	—
GB (200)	2.49	3.75	8.81	10.07	3.15	4.65	11.84	13.34	—
GC (400)	2.75	4.05	9.07	10.37	3.45	5.07	12.14	13.76	—
GG (1600)	4.79	5.19	11.11	11.51	5.99	6.59	14.68	15.28	—
Special GA 36 50 Pack	—	—	—	—	119.95	199.95	549.95	629.95	—

* New Royal Gold w/o Proc. w/Proc.
Funsaver w/o Flash 6.15 13.99
Funsaver with Flash 10.69 17.95
Funsaver Panoramic 35 7.99 16.29
Funsaver Weekend 35 9.49 16.89

PRO SLIDE FILM

Film	ASA	135-24		135-24 Proc.		135-36		135-36 Proc.	
		DI	Roch.	DI	Roch.	DI	Roch.	DI	Roch.
PHR (25)	—	—	—	—	5.39	5.49	14.08	14.18	—
VPS (160)	3.39	3.69	9.57	9.99	2.59	3.29	6.49	12.38	13.44
VPH (400)	4.99	5.29	13.68	13.98	2.99	3.99	23.95	25.95	64.99 66.99
PJA (100)	2.59	3.99	11.28	12.28	—	12.99	17.95	53.95	59.95
PZA (200)	4.59	4.79	13.28	13.48	—	22.95	23.95	66.40	67.40
PJC (400)	4.89	4.99	13.58	13.68	—	24.45	24.95	68.40	68.40
PMB (400)	3.85	4.99	12.54	13.68	—	19.25	24.95	62.70	68.20
PPF (400)	5.09	5.65	13.78	14.34	—	—	—	—	—
PPC (1600)	4.99	6.15	13.68	14.84	—	24.95	30.95	68.40	71.40

120 / 220 / BULK COLOR PRO PRINT FILM

Film	ASA	120		120 PP		220 PP		100'	
		DI	Roch.	DI	Roch.	DI	Roch.	DI	Roch.
PHR (25)	3.59	3.99	—	—	—	—	—	—	—
PRN (100)	3.15	14.95	15.75	—	33.95	34.95	—	—	—
GA (100)	2.09	2.99	—	—	—	—	—	—	—
VP (120)	2.05	2.49	—	—	—	—	—	—	—
VPS (160)	2.75	2.98	13.75	14.95	—	27.15	27.40	—	43.99
YPL (160)	3.15	3.20	15.75	15.95	—	—	—	—	—
YPL (400)	2.79	2.99	13.95	14.95	—	31.69	32.95	—	42.95
PMC (400)	3.05	3.15	15.25	15.75	—	30.95	32.49	—	45.95
PPF (400)	3.19	3.19	15.45	15.95	—	32.29	32.49	—	—
Kodaklin 6556 100'	—	28.95	5072-100'	—	58.95	5325-100'	—	76.49	—

KODAK COLOR PRINT SHEET FILM

	4x5		5x7		8x10	
	10	50	10	50	10	50
4106 (VPS)	15.39	69.90	—	124.89	57.69	—
4108 (VPL)	15.49	70.95	28.95	—	57.95	—
4111 (Vercolor Print)	9.95	—	—	—	32.95	146.95
4112 (Vercolor Intimg)	15.95	72.95	29.95	—	59.95	279.95
4325 (Comm. Inst.)	16.99	69.95	—	—	62.95	—
4329 (PRN)	15.95	73.95	—	131.50	64.95	—

FUJI FILM

FUJICOLOR HR PRINT							FUJI MAILERS	
ASA	24	w/p	36x	w/p	120		for Color Slide \$ 3.49	
CN (100)	1.79	8.11	2.09	10.78	2.55	—	FUJI DISPOSABLES	
Super CN (100)	2.79	9.11	3.35	12.04	—	—	Exp. 135-240 3.49	
CA (200)	2.15	8.47	2.59	11.28	—	—	Quick Snap 5.49	
Super CA (200)	3.15	9.47	3.99	12.58	—	—	w/flash 9.49	
CH (400)	2.48	8.80	3.50	12.19	2.95	—	Panorama 8.99	
Super CH (400)	3.59	9.91	4.25	12.94	—	—	Waterproof 10.79	
Super C (21000)	—	—	5.50	14.19	—	—	New! Panorama	
CU (1600)	3.40	9.72	5.40	14.09	—	—	w/flash 135-240 17.95	

FUJICHROME SLIDE FILM

FUJICHROME SLIDE FILM						
	24	w/Proc.	36	w/Fuji Proc.	w/Kodak Proc.	
RF (50)	3.35	6.25	2.99	6.48	7.38	
RD (100)	2.19	4.99	4.49	7.98	8.88	
RD Sensia (100)	3.29	6.68	4.75	9.34	8.24	
RM Sensia (200)	4.49	7.88	5.99	9.48	10.38	
RH (400)	--	--	5.75	9.24	10.14	

FUJI PROFESSIONAL SLIDE FILM

FUJI PROFESSIONAL SLIDE FILM										
Fuji		135-36	120	65	36	220	100'			
Velvia RVP (50)		6.09	3.60	4.99	8.45		82.95			
RFP (50)		3.99	3.60	2.99	-		67.95			
RTP (64)		6.39	3.60	4.99	-		69.95			
RDP (100)		5.99	3.99	4.49	7.75		73.95			
RHP 107 Provia (100)		7.49	4.65	-	8.99		-			
RHP (400)		7.50	5.70	-	-		99.00			
RPH Provia (400)		9.49	-	-	-		109.95			
Provia RSP (1600)		9.99	-	-	-		-			
NSP (1600)		3.89	2.29	-	4.99		38.39			
New NPL (160)		4.85	3.09	-	6.15		39.95			
New NPL (160)		-	3.09	-	-		-			
NHG (400)		4.50	3.19	-	6.29		-			
Neopan (400)		2.69	2.14	-	-		32.50			
Neopan (100)		2.09	-	-	(1600) 135-36		3.45			



Scotch
3M

COLOR PRINT

	135-24	w/Proc
100	2.08	7.99
200	2.59	8.39

DUPLICATE 100'.....		39.95	RVP 135-24 (50).....		4.79	400	2.59	8.68
SHEET FILM		4x5		8x10				
		10	50	10	50			
Velvia RVP (50)		16.99	75.90	62.99	292.00	135-36w/Proc.		
RVP (50)		14.49	69.95	56.95	259.95	100	2.75	10.94
RTP (64)		14.95	66.30	57.95	257.95	200	3.07	11.26
RDP (100)		11.95	59.75	56.95	—	400	3.45	11.64
Provia RDP II (100)		17.50	79.50	64.95	305.95	COLOR SLIDE		
NSP (160) 20 Sh.		24.45	—	49.45	—	135-36	w/Proc.	
NLP (160) 20 Sh.		24.45	—	—	—	100	2.99	6.99
NPL (160)		15.39	69.95	56.95	—	400	4.99	8.00
Fuji Quick Load Provia RDP II 52.95		—	—	—	—	640 T	—	—

KODAK SLIDE FILM

	ASA	135-24		135-24 Proc.		135-36		36X w/KODAK PR.		36X w/FUJI PR.	
		DI	Roch.	DI	Roch.	DI	Roch.	DI	Roch.	DI	Roch.
KM (25)	3.99	4.29	7.38	7.68	5.79	5.89	10.18	10.34	9.28	9.38	
KR (64)	4.09	4.18	7.48	7.57	5.79	5.89	10.18	10.34	9.28	9.38	
Elfine EA (50)	4.59	4.69	7.98	8.08	6.19	6.38	10.58	10.77	9.68	9.87	
Elfine EB (100)	3.95	4.49	7.34	7.88	4.89	6.38	9.28	10.77	8.38	9.87	
ET (160)	4.99	5.49	8.38	8.88	5.99	7.64	10.38	12.03	9.48	11.13	
Elfine ED (200)	4.79	5.49	8.18	8.88	5.99	7.64	10.38	12.03	9.48	11.13	
KL (200)	5.09	5.29	8.48	8.68	6.99	7.10	11.38	11.49	10.48	10.59	
Elfine EL (400)	5.09	6.50	8.48	8.98	6.49	8.80	10.88	13.19	9.98	12.29	
EL 135 100 fr. 99.95											
PRO SLIDE FILM											

LAST FRAME



LUNCH!

As this emperor penguin suns itself unaware on an ice flow in the Antarctic afternoon, a huge predatorial orca begins to plan its menu. U.S. Navy pilot Lt. Mike Brennan came upon this scene while assigned to the region.

Olympus OM-4 with motordrive, Zuiko 180mm f/2.8,
Fujichrome 100, exposure not recorded



The zoom that works when "stay boy, stay" doesn't.

Six feet long, three inch fangs and a nasty disposition. *Canis Lupus*, the North American timber wolf, can bring down an 800lb. moose at 40mph. Not exactly the roll over and play dead type. Sometimes putting a little distance between you and your subject is a good thing. Precisely what Tamron's new AF 200-400mm F/5.6 LD (IF) ultra telephoto zoom lets you do.

The 200-400 delivers dramatic telephoto up to 400mm, a range currently available only in fixed focal lenses. Perfect for getting within a muzzle hair of dangerous shots while keeping you at a safe distance. You'll also have the freedom to "zoom back" to capture fast moving subjects when they approach. Like feeding time. So whether you're following the pack (or it's following you) pack Tamron's 200-400mm. It not only gets you into tight spots, it gets you out of them.

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